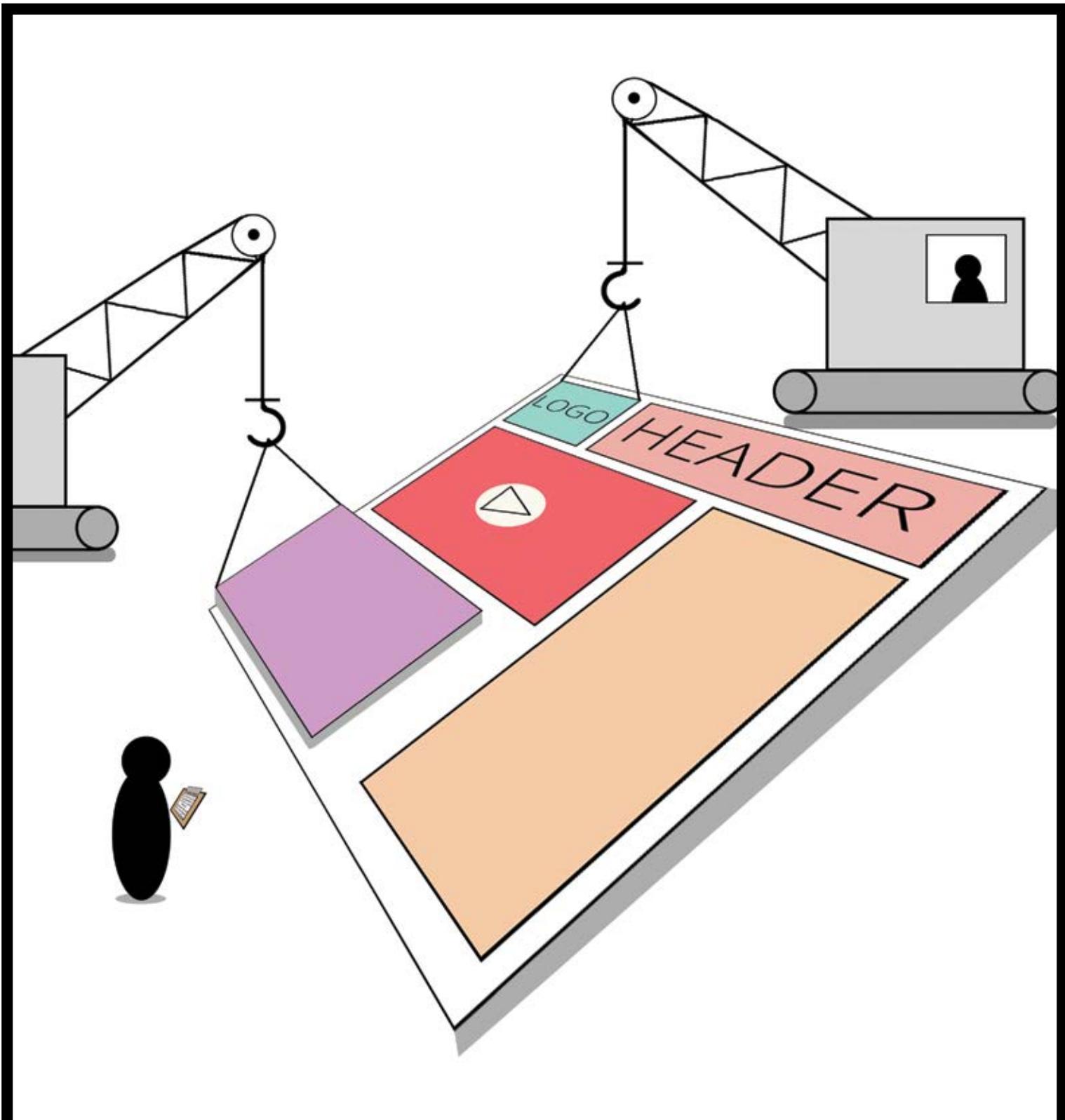


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Journal of the Society for Technical Communication

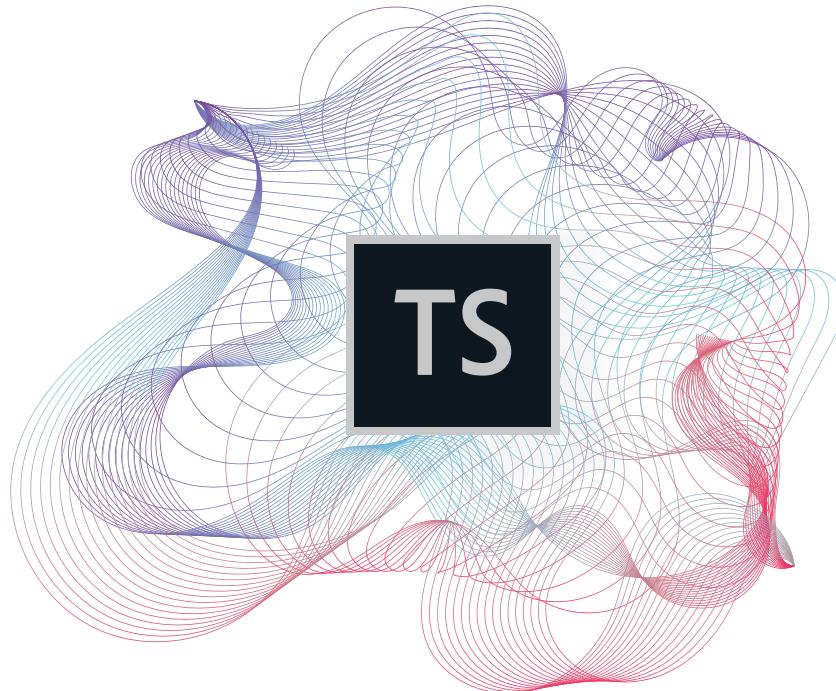




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Technical COMMUNICATION

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ARTICLES

APPLIED RESEARCH

- 127** Understanding Content Strategy as a Specialized Form of Management Consulting

By Sarah O'Keefe, Alan Pringle, and Bill Swallow

APPLIED RESEARCH

- 137** Defining Content Strategy as a Practice for Engagement

By Marli Mesibov

APPLIED RESEARCH

- 147** Visualizing Content Strategy for Complex Content Ecosystems

By Marina Sedmak, Kathleen Ruggeri, Robin Boldt, Sabrina Dennis, and Julianne Forsythe

APPLIED RESEARCH

- 163** The Enterprise Content Services Organization

By Cruce Saunders

APPLIED RESEARCH

- 177** Content Strategy as Practical Knowledge

By Heinz Wittenbrink and Jutta Pauschenwein



DEPARTMENTS

- 121** EDITORIAL
Bringing Clarity to Content Strategy
By Rahel Anne Bailie

- 125** ARTISTS' NOTES
On the Cover
187 BOOK REVIEWS
Jackie Damrau, Editor

ONLINE ONLY TECHCOMM.STC.ORG

- E10** RECENT & RELEVANT
Lyn Gattis, Editor

INSTRUCTIONS FOR AUTHORS

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Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

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Bringing Clarity to Content Strategy

Content strategy sits in the intersection of communication, user experience, and content management. The first book on content strategy, published in 2003 by Ann Rockley, favored techniques to manage product content, while digital agencies focused on the creation and management of content for websites. Since then, the breadth of content strategy has broadened to encompass content across a number of audiences, channels, and media.

The field of content strategy has undergone significant changes. The emergence eerily parallels the nascent field of usability—and later, UX—in the late 1990s and early 2000s, when passionate practitioners began to determine best practices, processes, and naming conventions. The field of content strategy is undergoing those same growing pains. Without a Society or Institute to further and codify the body of knowledge, content strategy has largely remained a community of practice. Though initiatives are being undertaken to further the practices of content strategy and ensure that the framework is robust enough to ensure the rapid changes in the demands on content, these efforts are at risk of falling behind when it comes to the practices in the greater field of “digital” and in the content strategy field itself.

The term *content strategy* conjures up a number of images, some of which are complementary, others contradictory. The aim of this issue is to place content

strategy within the larger grid of professions that collaborate and sometimes overlap. Content strategists may work in specialty areas that range from marketing to product to social to entertainment content, but the common thread is that they create plans to ensure that the right content gets to the right audiences in the right context. The strategy—in other words, the plan and design—is what separates a content strategist from a technical communicator, content designer, copywriter, UX writer, and so on. I often use the field of medicine to explain the range of specialties in content strategy: There are many types of doctors that practice in a variety of specialties, but they all have a basic medical degree as the common denominator. In content strategy, the common denominator is the systematization of content—creating an operational system that allows content to be produced reliably, at scale, and without degradation of quality.

Developing Content Strategy into a Discipline

Many of us have encountered the Indian parable of several blind men touching an elephant, where each person describes the elephant in terms they can understand. As the individuals assume that they each know the absolute truth of an elephant, an argument ensues about the true nature of the elephant, not taking into account that each person’s perspective is based on their personal, subjective experience. Content

strategy is like the elephant, and the discipline is experienced in different ways across the vast industry of content by the professionals who practice it, by the agencies who contract for it, and by the employers who hire for it. We’ve seen diverse definitions of content strategy, with the top definitions being those of Ann Rockley and Kristina Halvorson.

Ann Rockley, recognized as one of the early innovators that led to the discipline of content strategy, has defined a content strategy as “a repeatable method of identifying all content requirements up front, creating consistently structured content for reuse, managing that content in a definitive source, and assembling content on demand to meet your customers’ needs” (Rockley, 2003, p. 2).

Kristina Halvorson, CEO of Brain Traffic, defines content strategy as the process that “guides the creation, delivery, and governance of useful, usable content” (Halvorson, 2019, para. 1).

Content professionals working on the digital agency side may relate more to Halvorson’s definition, while content professionals working in the technical communication space are far more likely to relate to Rockley’s definition.

Yet, in the twenty-plus years that content strategy has been a discipline, there has been an



Rahel Anne Bailie

evolution of the profession, as one would anticipate in the fast-moving world of content, the principles remain relatively unchanged. My own definition of content strategy as the design of a “repeatable system that governs the management of content throughout the entire lifecycle” has been an attempt to span the two realms. I’ve worked on strategies in businesses and in digital agencies, and for government bodies as well, and while the details and deliverables can be wildly different, the core remains constant.

Content Strategy as a Distinct Practice

One of the early criticisms of content strategy has been from senior technical communicators, who claimed—rightly so, I hasten to add—that they did much of the work of a content strategist as part and parcel of their overall job description. It was in the best interest of the team to figure out what content was needed, what outputs were required, and how the team would manage to deliver sometimes hundreds, if not thousands, of pages of content by the time the product was supposed to ship. The job of planning out content for the product, particularly when the content team was a small team, fell to the most senior writer, who took on the planning, perhaps in conjunction with the product or project manager, as the step before actually producing any content.

This was a good deal for the organization, as the areas covered by what we now think of as content strategy got accomplished, but without being considered as

something separate from the actual content production. As the content landscape became more complex, however, organizations recognized that the need to plan content was a job unto itself. Planning content was not just getting the “right content to the right people at the right time” but delivering content reliably from the right sources, on the right platforms, to the right people, at the right times, in the right channels, in the right formats, in the right versions, in the right media, in the right contexts, in the right languages.

The realization that delivering content needed a strategy, and a distinct skill set, was not an easy transition. Perhaps the realization comes when a techcomm manager’s sole responsibility becomes to manage dozens of spreadsheets. It could be when the company is so daunted by the complexity that they bring in a supply chain management consultant to determine how to fix their particular mess. A delivery manager in an Agile environment inherits the process for producing content and discovers that it’s a far, far messier process than producing code. Depending on how much pain is involved in delivering content as part of a larger project largely affects how seriously an organization takes the problem. The content strategy—in other words, the analysis and planning—became a practice unto itself. The need for this practice becomes more evident than ever as our deliverables fragment across an increasing number of content types, from the core of product instructions

to emerging technologies, such as voice assistants influenced by AI (artificial intelligence).

Locating the Content Strategy Boundaries

A writer can be a content strategist, but not all content strategists are writers. More clearly stated, the practice of content strategy is not to write content, although, in some organizations, the practice of content strategy and content production gets rolled into a single job description. As well, content strategy should consider all content related to whatever goal is on the table, despite knowing that a particular project covers only a subset of content. A straightforward example is looking at all product-related content when being asked to create a social media strategy, in order to understand all of the types of content to which social media posts link—product information, support information, training modules, driver downloads, and so on.

If I had to roll all the varieties of content strategy into a single concept today, I would say that the boundaries of content strategy lie at somewhere between designing and architecting content systems. Today, I’d go a step further and say that the content strategy is the overall plan for how we operationalize content. What we didn’t have for the first twenty years was a recognizable vocabulary to describe what happens after we implement the strategy. When I look back to my publications about content strategy, I have mentioned content operations, but it was not until the larger digital industry wrapped

their minds around concepts such as DevOps did ContentOps make sense.

A relatable metaphor is a house. An architect plans and designs the house—that would be the strategy. A contractor brings in workers to build the house—that would be the implementation of the strategy. Then the decorators bring in the furnishings—that would be the content. Only then can a family move in and start living in the house—those are the day-to-day operations. There's not much point to designing a house that won't get built. Similarly, build a house not designed by a proper architect, and you may end up living in McMansion Hell. And without furnishings, the home would be very hard to live in. At the end of the day, it's important to begin with a solid strategy and follow through with good implementation to get a "living system" that works for the long-term comfort of those who use the house on a day-to-day basis.

Components of a Content Strategy

What goes into a content strategy? This entire issue delves into the aspects of the practice. However, the principles behind content strategy can be found in the discipline of management consulting. I sometimes describe what I do as management consulting, but, instead of financial turn-arounds, I focus on content turn-arounds. The similarities are striking, in that the core of both practice areas can be summarized as Discovery, Gap Analysis, and Recommendations.

In the area of content, we look at content as a business asset that can be used to help solve a business problem or further a business goal. To get to the heart of the content problem we look at the issues from the perspective of five pillars:

What are the business needs?

The business is likely sponsoring a content project because of a perceived shortcoming of the content. There are five overarching business drivers for content:

- Extend business reach. The business wants to reach new markets, which requires content for new products, contexts, or in new languages.
- Reduce time to market. There is time sensitivity about getting a product or service to market, and the content needs to be produced efficiently.
- Manage risk. Regulated industries are particularly interested in risk, as regulatory bodies can impose fines or halt operations if the company produces inaccurate content or falls out of compliance.
- Retain brand trust. This business driver covers a range of aspects, from brand loyalty to business growth, where content is a key aspect of ensuring that consumers trust the brand.
- Increase operational efficiency. This refers to when efficient and effective content production becomes a factor in being able to deliver quality content in a timely manner and scale operations as needed.

What are the user needs?

Content facilities user needs; whether to engage with a product or service on the acquisition side or to get operational or do some troubleshooting on the retention side, filling the needs of users is paramount to a content strategy. User needs and business needs should be matched, like two sides of the same coin, as users are interested in filling their own needs and have little or no interest in the needs of your business.

What are the content needs?

Once there is an understanding of what users and the business need, the content requirements can be analyzed, and a plan made for the content lifecycle. In other words, what content needs to be provided, and what editorial and technical aspects are involved?

- How will the content be acquired, configured, and metadata attached to it?
- How will the content be stored, put through workflow, and retrieved during each revision cycle?
- How will content be delivered and what are the post-delivery considerations for archiving or iterating the content?
- What will be the governance model around reviewing, authorizing, publishing, and revising content?

What are the operational needs?

What systems are in place to facilitate the production, management, delivery, and governance of content? Whatever system is being used, does it help

Rahel Anne Bailie

or hinder the professionals who produce the content? Does the organization understand enough about content technologies to be able to even recognize what they need?

What are the technology needs?

What technologies are in place, and what new technologies are needed to support the efforts described? Does an organization have sufficient processing power to deliver on, for example, personalized content across multiple audiences, products, and markets, or does the organization lopsided in how they invest in content technologies?

As technical communicators, we may need to learn a new vocabulary to communicate with the executive stakeholders. But I firmly believe that the knowledge that technical communicators bring to the table is a huge advantage in the understanding

of producing content at scale. A content strategist will carry out the discovery phase and gap analysis using some of the techniques that have become standard practice, such as the content inventory, quantitative audit, and qualitative analysis, which then culminates in a set of recommendations. You will see these themes repeated across the articles in this issue, sometimes explicitly and in other cases, implicitly. We are merely scratching the surface in this issue, with the goal being to spark discussion between the areas of the business where content strategy practices can be found.

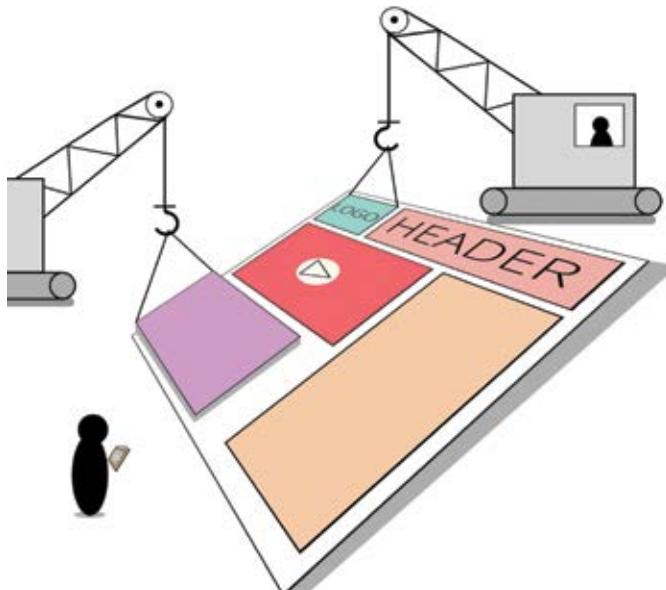
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About the Author

Rahel Anne Bailie is Chief Knowledge Officer at Scroll in London, UK, and an instructor in the Content Strategy Master's Program at FH-Joanneum in Graz, Austria. She has been consulting in the area of content strategy since 2001 for corporations, government, and charities, and has co-authored two books on the topic. She is available at rahel.bailie@gmail.com.

On the Cover



My image demonstrates the construction of a website, starting with a wireframe. The figures controlling the cranes represent the designers and developers that help place parts of a website. Graphics, text, videos, and other content will ultimately determine whether a user will stay or leave, so these are important. The figure with the clipboard represents the content strategist. The responsibilities of a content strategist are important as they dictate what will go on a website to represent a client, such as an individual or company. The clipboard represents the results of studies, notes, and other content ideals to keep in mind when building the website. Though the image primarily focuses on the practice of content strategy, theories are still being used to help the content strategist decide what direction to take with a website. Likewise, others learn good practices from content strategists as they work with them, such as designers and developers.

About the Artist

Elias C. Escobedo Degollado is a recent Kennesaw State University graduate. With a Bachelor of Science in Technical Communication, he plans to continue working at The Home Depot as a user experience designer, where he will apply his knowledge of usability testing to improve the user's experience. He is available at eescobed@students.kennesaw.edu.

Honorable Mention



For this illustration of content strategy, I used a simple, minimalistic look with a simple color scheme. I used white, pale yellow, and black. I used Illustrator to pen a lightbulb that represents developing ideas and content for a website, with the wires spelling out "Content Strategy" inside. I then wrote "Plan. Create. Deliver." on the bottom. These words were found directly from the definition of Web content strategy. They describe the process of developing a strategy, planning, creating, and then delivering, as I did with the cover. I wanted the viewer to immediately know the intention of the image just by a quick look, while also keeping a minimalist and stylish look.

About the Artist

Katherine Turnipseed is a senior at Kennesaw State University, where she is studying interaction design. She has a passion for creating designs that are minimalistic and striking as well as descriptive and informative. She hopes to spend her career creating designs that resonate with all people. She is available at kturnip3@students.kennesaw.edu.

Honorable Mention



When researching content strategy, I came across a quote by Michael Brenner that struck me: "A content strategy flips the tables on traditional, linear marketing by defining the process and then securing the right resources for producing a consistent stream of content mapped to buyer needs across all phases of the buying cycle." The imagery of content strategy flipping the table on traditional marketing clung to me as I continued my research, and it became the focus of my illustration.

Using a mixture of Procreate, Photoshop, and Illustrator, I began with the table and branched out from there. I went through several editions of the design—with words, without words, without a room around the table, etc.—and decided to exhibit the main message of the quote within the image so it would be more understandable to the audience. Rather than writing it simply across the top, I took a more unique stance by integrating the message into the image itself—chalked into the floor, painted onto the table, etc.

About the Artist

Brianna McBride is a sophomore student at Kennesaw State University, where she is pursuing a major in Interactive Design and a minor in Technical Communication. She also serves as an Honors Ambassador and Writing Tutor for her university. After finishing her undergraduate studies, Brianna plans to work as a User Experience/User Interface designer to further meaningful media communication between people and technology. She is available at bmcbrid3@students.kennesaw.edu.

Understanding Content Strategy as a Specialized Form of Management Consulting

By Sarah O'Keefe, Alan Pringle, and Bill Swallow

Abstract

Purpose: The goal of this article is to position content strategy as a specialized subdiscipline of management consulting. Standard management consulting practices, such as gap analysis and needs analysis, are the foundation of content strategy practices.

Method: This article draws from the theory on management consulting and shows how management consulting principles work in the context of content strategy projects.

Results: Practitioners in the burgeoning field of content strategy will develop a better sense of how their work aligns with overall management consulting practices.

Conclusion: Management consulting already has best practices and methodologies. Content strategy builds upon that foundation to establish a professional discipline.

Keywords: management consulting, content strategy, business requirements

Practitioner's Takeaway:

- Content strategy is still being defined by practitioners, and management consulting principles offer a foundation on which the industry can build the specialized profession of content strategy.
- Content strategy is fundamentally the practice of solving business problems through the use of information.
- Content strategists must align their work with their organization's critical business problems.

Content Strategy and Management Consulting

An Overview of Management Consulting

Management consulting is a “professional service that helps managers to analyze and solve practical problems faced by their organizations, improve organizational performance, learn from the experience of other managers and organizations, and seize new business opportunities” (Kubr, 2002, p. xv). Management consultants help their clients with “important issues such as handling complexity, achieving sustainable organizational growth, innovating, achieving change and enhancing productivity” (ISO, 2017).

A management consulting project typically has several phases, which include the following:

- Needs analysis
- Gap analysis
- Solution recommendation
- Solution implementation

Needs Analysis

In the needs analysis phase, the consultant collaborates with the client to “identify the changes to an organization that are required for it to achieve strategic goals” (“Business Needs Analysis,” n.d., para. 2).

For the needs analysis, consultants rely on several methods to collect information, including:

- Examining existing records: files, reports, and publications
- Observing group processes, such as staff meetings
- Distributing questionnaires
- Interviewing those working within and affected by the processes under review (Kubr, 2002, pp. 190–194)

A solid needs analysis is critical; otherwise, the organization may find itself solving the wrong problem. For example, if the strategic goal is to increase market share for a specific product in India, the needs analysis must first identify what factors would influence market share in India and then determine which of those factors to focus on.

Gap Analysis

Needs analysis and gap analysis are closely related, but where the needs analysis focuses on the requirements, the gap analysis focuses on the difference between the desired state and the current state (the gap).

Rouse (2014) describes three approaches for gap analysis:

- McKinsey 7S Framework: Named for the McKinsey & Co. consulting firm, this approach relies on analysis of seven aspects:
 - Strategy
 - Structure
 - Systems
 - Staff
 - Style
 - Skills
 - Shared values
- Nadler-Tushman model: Named for Columbia University professors David Nadler and Michael Tushman, this gap analysis model divides business processes into three groups:
 - Input: resources used, operational environment, and company culture
 - Transformation: systems currently in place that convert input into output
 - Output: can occur at system, group, or individual level
- Strengths, weaknesses, opportunities, and threats (SWOT) analysis: In this model, the consultant and client identify factors in the four SWOT categories. With those factors defined, the consultant and client can develop the best solution that plays to the company’s strengths while avoiding threats (Rouse, 2014).

From the needs analysis and the gap analysis, the consultant develops a list of requirements and then a proposed solution to the identified problem (“Gap analysis,” 2018).

For example, the needs analysis might find that product pricing is a key factor for success in the target market, and the gap analysis might state that the organization currently uses a single global pricing strategy but should instead analyze individual markets to determine prices.

Solution Recommendation

The proposed solution puts the overall problem analysis in context and should match up to the identified requirements. The consultant should consider several factors in determining the best solution, including:

- What should the solution achieve?
- How will the new process be different from the current one?
- Will the effects of the solution last?
- What are the potential difficulties?
- Who will be affected by the solution?
- When is the best time to implement changes?

(Kubr, 2002, pp. 215–216)

In some cases, organizational constraints may require a solution that only addresses some of the identified requirements. For example, the best technical solution might also be the most expensive option; however, a solution that addresses 80% of the requirements at 20% of the cost is also available. The organization may choose the less expensive solution due to budget constraints.

The solution recommendation should include a project plan with resources and timelines, a mapping to identified requirements, and a budget.

Solution Implementation

Implementing the solution is the culmination of the preceding project phases: “If there is no implementation, the consulting process cannot be regarded as completed” (Kubr, 2002, p. 229).

Should the management consultants who recommended the solution have a role in the implementation work? Kubr and his contributors (2002) argue that the consultants “prefer to be associated with the implementation of changes that they have helped to identify and plan” (p. 23). Others argue that a key characteristic of management consulting is that “consultants are external to the problem that is being addressed, with no implementation responsibilities” (Srinivasan, 2014, p. 258).

No more than 30% to 50% of consulting engagements include implementation work (Kubr, 2002, p. 24). Viewing the recommendation phase as the end of a consultant’s involvement reflects a common misconception about management consulting in general:

Consultants do not have to achieve more than getting their reports and proposals accepted by

the clients. Some clients choose [no consultant involvement in implementation] because they do not really understand that even an excellent report cannot provide a guarantee that a new scheme will actually work or that the promised results will be attained. (Kubr, 2002, p. 24)

Ideally, the involvement of the team that defined the solution provides continuity in the solution implementation phase. The consulting team can also augment skills of the organization’s staff.

An Overview of Content Strategy

Content strategy is a subdiscipline of management consulting. Like management consultants, content strategists begin by identifying business problems. The key difference is that content strategists focus on business problems that the organization can solve with content.

Typical content strategy challenges include the following:

- New business requirements are impossible to support in the current content development pipeline, so reengineering is required (analogous to business process reengineering).
- The business requires the content workflow to scale for multiple delivery formats and multiple languages.
- Enhanced productivity. The business needs efficiency, so the content workflow must eliminate artisanal, time-consuming content production processes and replace them with repeatable, scalable processes.
- Buyers can mix and match products, which creates a huge number of possible product configurations. The content strategy must make it possible to mix and match content in similar ways to produce publications that match the custom product configuration.
- Global business requirements include different languages, localization, and internationalization. The content pipeline must provide support for all of these global requirements.
- Corporate brand positioning requires specific messages and content themes.
- Strategic business goals introduce new requirements for content systems. Strategists must design and build content systems that support the identified goals.

Content Strategy and Management Consulting

Bailie and Urbina (2013) provide the connection from these content requirements to content strategy:

Publishing now requires a level of planning that addresses, in a holistic way, technical and business requirements along with editorial, social, and process requirements. This is called “content strategy,” a comprehensive process that builds a framework to create, manage, deliver, share, and archive or renew content in reliable ways. It’s a way of managing content throughout the entire lifecycle. (p. 4)

Unfortunately, the popular definition of content strategy has largely degenerated into “how to do content marketing.” The #contentstrategy hashtag on Twitter is filled with discussions of copywriting strategies, marketing tactics, and the like. But many experts see content strategy differently. In addition to Bailie and Urbina’s (2013) preceding definition, Halvorson (2008, para. 10) defines content strategy as “planning for the creation, publication, and governance of useful, usable content.” Her list of content strategy components includes content purpose, gap analysis, metadata, and implications of strategic recommendations. Others have created a variety of definitions:

- “‘Content strategy is to copywriting as information architecture is to design.’ Rachel Lovinger” (Bussolati, n.d., para. 4).
- “‘Planning for the creation, aggregation, delivery, and useful governance of useful, usable, and appropriate content in an experience.’ Margot Bloomstein” (Bussolati, n.d., para. 6).
- “‘Content strategy encompasses the discovery, ideation, implementation and maintenance of all types of digital content—links, tags, metadata, video, whatever.’ Robert Sibley” (Bussolati, n.d., para. 7).

Content marketing is a tactical facet of a larger content strategy that “focuse(s) on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience—and, ultimately, to drive profitable customer action” (Content Marketing Institute, n.d., para. 3), but it should not be mistaken for the strategy itself.

The steps in the content strategy process align with those in management consulting: needs analysis,

gap analysis, solution recommendation, and solution implementation.

Content Strategy Needs Analysis

During the needs analysis, the content strategist interviews stakeholders. At a minimum, this group includes representatives of content creators, product management, engineering, information technology, and executive management (O’Keefe & Pringle, 2012b).

By interviewing a solid cross-section of stakeholders across the organization, the content strategist can identify and prioritize the drivers for change, requirements, and success metrics for the content strategy. Critically, the content strategist must keep an open mind during the needs analysis and not begin to focus in on possible solutions at this stage.

In addition to interviews, the needs analysis should include an assessment of existing content. The content strategist conducts a *content inventory* to produce lists of all existing content. Then the strategist follows up with a *content audit* to measure the quality of the content. The appropriate metrics for a content audit will vary depending on the type of content being assessed. Rockley and Cooper (2012) recommend asking these questions to determine content quality:

- Is the content appropriate for customers?
- Does it use customers’ terminology?
- Is the content well written?
- Are the tone and level of detail correct?
- Does it meet customers’ needs (for example, help a user complete a task)? (p. 103)

O’Keefe (2014) defines a hierarchy of content needs to assess levels of content quality:

- Available: Information has been written and is published in a location accessible to the people who need it (para. 6–8).
- Accurate: Information is technically correct and is well-written (para. 9).
- Appropriate: Information uses a reading level that matches the target audience. The language and the delivery format are those needed by the target audience. The information is accessible to the target audience (para. 10–12).
- Connected: The audience has the opportunity to engage with the content (para. 13–14).
- Intelligent: Information can be personalized and filtered based on reader needs (para. 15–17).

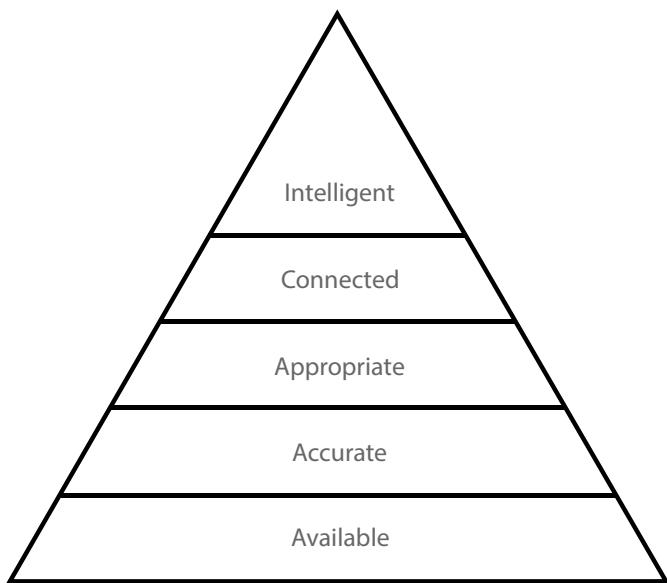


Figure 1. Hierarchy of content needs

The content audit allows the content strategist to cross-check the information gathered in stakeholder interviews. The content strategist thus develops a solid understanding of the current state of content in the organization: “[A]ny project or initiative worth its salt begins with in-depth analysis of all relevant information and circumstances, which in turn leads to informed, achievable recommendations” (Halvorson, 2010, p. 59).

During the needs analysis phase, the content strategist begins to explore how the organization needs to use content to achieve strategic goals. In the case of the earlier example of increasing market share in India, needs might include support for multiple local languages, delivery of content on mobile devices, and ensuring that content is appropriate for the target audience.

In this phase, Rockley and Cooper (2012) suggest examining these factors:

- Who needs and uses particular content
- How well the current content supports customers
- The current processes for how the content is created, managed, and delivered (p. 10)

These other factors are also worth examining:

- Strategic changes in business focus (products, markets, or services)
- Stretch goals for the organization
- SWOT analysis that affects content decisions

The goal of the needs analysis phase is to paint a vivid picture of the current state and identify the drivers for change.

Content Strategy Gap Analysis

A content strategy gap analysis uses a typical set of categories:

- People: Does the organization have the right people to address the needs identified? If not, what sorts of roles and skills are missing?
- Process: How do content processes need to change to support the identified needs?
- Tools: What tools and technologies would best support the identified needs? Are those tools in place already?

The results of a content strategy gap analysis may include the following:

- Roles and responsibilities
- Content quality gaps
- Content architecture and storage format
- Content management
- Content governance gaps
- Content delivery gaps

Roles and responsibilities

The content strategist develops a list of current staff roles and needed staff roles. For example, if the organization needs to begin localizing content for the first time, a localization manager may be needed. Moving toward structured content often requires an information architect role. The information architect determines the organization, labeling, navigation, and taxonomy for content (Rockley & Cooper, 2012, p. 257).

Content quality gaps

The content quality gap analysis assesses the distance between the current quality of the content and the desired quality of the content. For example, if the organization is pursuing a content marketing strategy, then the content needs a voice and tone that match the strategy.

Content architecture and storage format

With overall content strategy requirements in place, the gap analysis can assess whether the current content format can deliver on those requirements. If, for example, the organization wants to improve content

Content Strategy and Management Consulting

velocity—the speed at which information is moved through the content lifecycle—the content format can play a part. Other gaps in content architecture might include content metadata; some formats are better than others at encapsulating metadata. A common outcome of the gap analysis is a requirement to change the content authoring tools and technologies, because the legacy system cannot meet the new requirements.

Content management

Content management focuses on the systems and processes in place to manage content creation, storage, editing, review, and publication. How does the content development process support the content strategy? Is content controlled throughout the content lifecycle? Many organizations rely on personal communication rather than software systems to manage information flows. As content volume scales up, the manual approach becomes unsustainable and may be identified as a gap that needs to be closed.

Content governance gaps

The governance gaps address conformance to regulatory requirements, organizational quality standards, and risk management. How does the organization identify content that is obsolete or out of date? How are content updates handled? What is the review and approval cycle for content within the organization? Are legal and regulatory approvals well understood?

Content delivery gaps

Many content strategists focus only on Web content, but there are numerous options for delivery of content. The content strategist must determine which delivery options are best for the organization and how to ensure those options are provided. The content delivery gap analysis should include an assessment of delivery platforms—today, the default assumption is Web-based delivery, but there are other choices, including syndication options and physical media, such as CD-ROMs, flash drives, or even paper. The packaging of the content is also a concern. Options include Web content, print, podcasts and other audio, video, and more.

Finally, the content delivery gap analysis needs to look at the user experience with the content. That is, if the primary delivery is Web content, how is that content presented? How is the information organized?

How can readers access the information? The gap analysis documents the difference between the current state of the content delivery and the desired state.

Content Strategy Solution Recommendation

Content strategy solution recommendations vary depending on the scope of the problem being addressed. Typical components include recommendations for the following.

Content lifecycle

The content lifecycle describes how information is “conceptualized, planned, created, and maintained” (Content Strategy, Inc., 2017, para. 1). In a solution recommendation, the content strategist documents how content is created, edited, reviewed, approved, managed, delivered, maintained, and archived in a specific organization.

Content governance

Content governance documents the quality assurance process inside the content lifecycle. Governance “defines who is allowed to create, approve, and publish content. Governance also defines how those decisions are made on a daily basis” (Bailie & Urbina, 2013, p. 47). The content governance solution may include legal or regulatory approvals, automated expiration of content beyond a certain age, and so on. Content that can affect health and safety typically requires more stringent governance. For example, medical devices, industrial equipment, and pharmaceuticals all have health and safety risks, and correct usage or application is critical. In contrast, video game companies focus their governance on delivering compelling content and reducing the risk of cultural missteps.

Content velocity

Content velocity refers to how quickly information needs to move through the content lifecycle and content governance issues (O’Keefe, 2013). Typically, software companies move faster than hardware companies. Commercial companies move faster than government agencies. Games, entertainment, and consumer electronics move faster than industrial applications. The content strategist must ensure that the recommendation meets the organization’s content velocity requirements.

Content integration

No organization should produce content in a vacuum. For example, a product description likely draws from product specifications developed by a product management or engineering team. UX content (the text on a software or Web application interface) must be integrated with software code. Audio instructions or voice recognition interfaces connect with the product. The recommendation needs to address the integration of content with other business data.

Content architecture

A content model describes the allowed components of a piece of content. A journal article, for example, might require an abstract, an author byline, and a biography in addition to the article itself. The content model must be flexible enough to accommodate typical content variations, all delivery platforms, and all languages. At the same time, it is helpful to provide some guidance to the authors by creating a prescriptive content model. The recommendation describes a content architecture that supports all identified types of content. The content architecture usually provides for multiple types of content and documents the required structure for each type.

Content delivery

The content delivery recommendation describes the formats in which information should be delivered. Delivery includes human-consumable formats (like Web pages, printed documents, and podcasts) but also provides for machine-consumable formats (like syndication information (RSS feeds), APIs (software interfaces), string files for use in software, and so on).

Localization

The localization recommendation describes all aspects of content localization—how content is tailored to specific language and cultural audiences. Components may include the following:

- Short-term and long-term strategy for localization support. How many languages are supported? How and when are languages added or removed from localization?
- Accounting for regional and cultural requirements. Are different units of measure required? What content conventions need to be included or avoided for a particular audience? What types of graphical content are needed?

- Content internationalization requirements. How should content labels (notes, warnings, etc.) be handled? How should varying formatting or layout requirements be handled?
- Mapping of content against recommended localization approach, such as human translation, machine translation, transcreation, or a combination of approaches
- Resource allocation, whether internal or external, to address localization requirements
- Localization workflow for each type of content that required translation

Tools and technologies

The tools and technologies section of the recommendation describes the software and systems needed to make the recommended content strategy a reality. Tools and technologies may include the following:

- Content management systems
- Authoring tools
- Grammar checkers and other editing support
- Review and approval workflows
- Publishing tools
- Conversion tools
- Content delivery systems
- Localization systems, such as a translation management system and a translation memory system
- Content integration tools, such as APIs or other ways to connect disparate systems

Business case

In addition to all of the content-related components, the content strategy recommendation usually includes a business case that provides the justification for the investment: “Building a business case requires you to quantify how an investment (in tools, technology, training, or anything else) will improve business results. It is not sufficient to claim that your content strategy will contribute to business goals; you must estimate the improvement and show that the results are worth the investment” (O’Keefe & Pringle, 2012a).

Budget and roadmap

The recommendation provides a budget and roadmap for moving from the current state of the content to the recommended state. At a minimum, the budget includes the following:

Content Strategy and Management Consulting

- Software licenses
- Hardware needs or cloud computing requirements
- Installation and configuration
- Software customization
- Document conversion
- Training

Some organizations attempt to quantify lost productivity and other soft costs, along with additional resources needed to make the transition to the new content strategy.

The roadmap breaks down the tasks needed to complete the project, shows task dependencies, and provides the level of effort required for each task, along with the role or skill sets of the person who needs to perform each task.

Content Strategy Solution Implementation

Like management consulting, the approach to implementation varies among content strategists. Some consultants offer both strategic assessments and implementation support; others focus only on delivering strategic advice. Management consulting is most often delivered by external consultants; content strategists are more likely to be part of an organization's staff. External content strategists are usually less involved in ongoing tactical work and have an easier time gaining the credibility and authority needed to push for significant change. Internal content strategists, however, have the advantage of understanding the inner workings of an organization, so they can push for incremental improvements over time. They can use their social capital inside the organizations to forge alliances and influence decisions.

Internal content strategists often lead ongoing efforts to improve content. External consultants are more often brought in to work on a specific time-sensitive initiative. The rest of this section focuses on implementation of discrete content strategy projects.

Turning the recommendation into reality

Content strategy projects present a challenging combination of information technology (IT) and content issues. A successful project implementation must balance these two competing sets of priorities. For IT participants, the temptation is to focus on software—content management systems or API

connectors. Content stakeholders instead want to discuss the end product—the appearance of a page on the organization's website. It is the content strategist's job to bring these two perspectives into alignment during the project.

The first step is to revisit the recommendation and the roadmap and begin to map those recommendations onto reality. Does the proposed schedule intersect with other major organizational deadlines? For example, it is a mistake to attempt a major change in content processes while simultaneously delivering for a product release. Where possible, the content strategy initiative needs to avoid overlap with existing content deadlines and responsibilities.

The budget is also subject to scrutiny. Is the organization willing and able to commit the funding needed to make the content strategy project happen?

Change management

Change management should be a top priority for the content strategy team. Content stakeholders tend to feel strongly about their existing tools, technologies, and workflows, and they rarely welcome changes. A careful change management program ensures that stakeholders know why the change is being made and have a chance to adapt to the new approach.

Resources

The project roadmap describes the resources needed to complete the project. The content strategist needs to ensure that the project has adequate resources, or plan for compromises on deliverables or due dates. Staff resources are better informed about the internal workings of the organization; external resources are able to focus on the project because they do not have to also complete their day-to-day responsibilities. Many projects use a combination of internal and external resources for the best results.

Conclusion

The principles of management consulting—a formal definition of the business problem to be solved and a methodology for developing a solution—provide a foundation for content strategy. Content strategists build on this foundation with content-specific techniques, such as content inventories, content audits, content architecture, and taxonomy development.

The practice of content strategy must balance between the strategic goals of the organization and focusing on content. Too much of a focus on content results in a content technician—someone who can build taxonomy or create new publishing workflows but who does not understand how those actions affect the rest of the business. Too much of a focus on strategic goals may result in a demand for a solution that is needlessly complex or cost-prohibitive.

Content strategy touches on numerous specialties and subspecialties. There is room for specialists that focus on localization, system implementation, information architecture, marketing content, product content, and more. At its core, however, content strategy is a specialized form of management consulting that seeks to solve business problems using a rigorous approach to the content lifecycle in the business.

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Table 1. Summary of content strategy components and deliverables

	Management consulting or content strategy task	Content strategy deliverables
Needs analysis	Identify business problem to be solved	Connect business problem to content Content inventory Content audit Current state of content Drivers for change
Gap analysis	Difference between desired state and current state	Gaps in roles and responsibilities Content quality gaps Content architecture gaps Content management gaps Content governance gaps Content delivery gaps
Solution recommendation	Propose a solution to the problem	Content strategy Content lifecycle Content governance Content velocity Content integration Content architecture Content delivery Localization strategy Tools and technologies Business case Budget and roadmap
Solution implementation	Build/implement the solution to the problem	Solution built and completed as specified in the solution recommendation

Content Strategy and Management Consulting

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Defining Content Strategy as a Practice for Engagement

By Marli Mesibov

Abstract

Purpose: This article presents a methodology for using content strategy to promote behavior change in digital interventions. The concept of incorporating motivational theories for achieving health outcomes has been accepted as a valuable element across industries including public health, mental and physical healthcare, financial wellbeing, and education. The author will demonstrate how integrating principles from Self-Determination Theory—a leading theory of human motivation—with content strategy practices can successfully engage and motivate people across digital self-service platforms, focusing specifically on health care.

Method: At Mad*Pow, the design team, content strategy team, and behavior change team have implemented content strategy practices in digital interventions via websites and applications. The creation of a content strategy guides the communication frequency, delivery style, information, and channels/touchpoints in order to best achieve the same goals that behavioral science does in face-to-face interventions. The intervention is then built, tested, and launched, after which the team tracks success metrics.

Results: The Mad*Pow team has since measured results from clients and consumers, and can show how behavior change methodologies—as implemented using a strong content strategy—positively impact outcomes.

Conclusion: Target audiences can be effectively engaged through content strategy in a manner beyond what is available via print, digital design, or other methods.

Keywords: behavioral science, behavior change, content strategy, digital interventions, patient engagement

Practitioner's Takeaway:

This article:

- Presents content strategy as an effective connector between clinical research and digital interventions for strategists in the academic, clinical, and other high-impact areas
- Provides valuable techniques and insights into devising content

strategies to engage and impact populations across self-service industries

- Introduces the field of motivational psychology as an area of study for content strategists to improve engagement

Content Strategy for Engagement

Introduction

The study of human behavior can broadly be defined as investigations into individual, social, and environmental factors that influence human action. In the roughly 150 years of study, we've seen different trends and schools of thought related to which factors weigh more heavily on individual human action from instincts and drives (Freud), to responses to environmental stimuli (Skinner), to more nuanced and reciprocal descriptions of how our internal motivations interact with the broader social environment to produce behavioral intentions and actions.

The leading theory of human motivation, Self-Determination Theory, was developed as a direct rebuttal to the radical behaviorism popularized in the 1950s and '60s. The theory maintains that motivation develops from within a person, grounded in the basic human needs to develop skills and capacities, to act of one's own accord, and to connect to others and to their environment. When applied toward health behavior change, the theory has been used to guide interventions that initiate and sustain health behaviors, such as: exercise; healthy diet; smoking cessation; improved mental health; and long-term condition management for conditions including diabetes, hypertension, high-cholesterol, and heart-disease. These interventions have had great success in clinical settings and, only recently, have expanded into digital domains.

Digital health interventions typically employ websites, mobile applications, text messages, email, wearable devices, or sensors to deliver content embedded with techniques designed to change existing patterns of behavior. They may take the form of exercise or meal planners, medication adherence trackers, or personal coaches, all intended to take on some of the work otherwise provided by in-person providers and services. However, where tone and frequency of treatment can be defined by a provider in-person, digital interventions cannot foster adherence in quite the same way. Without a human to reach out to another human, design teams must create and implement behavior change strategies designed to increase the person's engagement. These strategies create appropriate and effective communication between the device and the patient using features, techniques, content, and tone to best support real-world behavior change.

Content strategy is a discipline which promotes and plans for the design and creation of appropriate

and effective content. It has developed as a strategic yet tactical field. The oft-agreed upon definition of the field is some variation on "getting the right content to the right user at the right time through strategic planning of content creation, delivery, and governance" (Content Strategy Alliance, 2014). More detailed definitions include "Content strategy guides the creation, delivery, and governance of useful, usable content. Content strategy means getting the right content, to the right people, in the right place, at the right time. Content strategy is an integrated set of user-centered, goal-driven choices about content throughout its lifecycle" (Halvorson, 2017).

All of these definitions focus on one content objective: to benefit and guide an audience. The last definition from Halvorson also mentions "user-centered, goal-driven choices" (2017, para. 17). In other words, the content strategy is what connects the needs of the audience to the words, images, or other content on the screen. It is a methodology by which one creates engagement.

Content strategy has the opportunity to provide greater impact when it comes to digital intervention design or the implementation of the theories of motivation. In digital intervention design, designers, developers, and content creators build applications or websites to support an individual in positively changing his or her behaviors. As noted, the challenge is to implement a theory of motivation in a manner that best supports the digital constraints and opportunities available, to engage and benefit the patient.

This review will share studies on behavior change and digital interventions to demonstrate the role of content strategy in applying theories of motivation into the digital realm. The first section begins with a review of traditional models of engagement and theories of motivation. The review will then look at studies that display challenges in shifting behavior change strategies to the digital realm and review examples of content strategy in practice, increasing engagement through the use of behavior change methodologies.

Traditional Engagement Methodologies

When healthcare professionals define *engagement*, they use terms such as *meaningful involvement* and *active participation*. Although there is no single agreed-upon definition, all explanations of patient

engagement focus on the patient as an active participant in making decisions and taking steps to improve his or her health.

In face-to-face treatment, clinicians and providers use many tactics to promote positive behavior change and improve engagement in patients. Behavior change goals can range from altering dietary patterns, to increasing physical activity, to tracking and improving medication adherence. These sorts of behavioral lifestyle changes can significantly impact a patient's ability to maintain wellness or improve prognosis. For example, a 2014 study collected evidence that a diabetes-related behavior change could "improv[e] the health behaviors and health outcomes of participants" (Peek et al., 2014, para. 35). Their study showcased numerous behavior change theories and models, including the Theory of Planned Behavior, Social Modeling, and the Ecological Model. In another 2014 study, researchers conducted a qualitative study of chronic obstructive pulmonary disease (COPD) patients and found that successful techniques correlated with motivating interventions in Self-Determination Theory (Langer et al., 2014).

Although there are many theories of motivation used across behavioral health, Self-Determination Theory (SDT) is one macro theory that has seen significant research and a large body of proof emerge since its development in the 1970s. This is the theory most-often utilized by the Mad*Pow behavior change analysts, as it transfers well to digital interventions.

Self-Determination Theory

Self-Determination Theory is a theory of motivation originally developed by Edward L. Deci, and refined in the 1990s by Deci and Richard Ryan (Deci and Ryan) as well as scholars internationally. The theory defines motivation as not just a unitary concept—something to have more or less of—but also as a qualitative concept with lower quality motivation stemming from outside the self (such as when we act to receive a reward, avoid punishment, or protect our self-esteem or boost our ego) and higher quality motivation when we act out of personal interest and enjoyment of doing a behavior, or because we believe that behavior to be an important and valuable thing to do. In SDT, the quality of motivation for a given behavior has a greater impact on the likelihood that behavior will be sustained over the long-term.

According to SDT, the methods by which higher-quality motivation is achieved center on satisfying what are known as "basic psychological needs" that all people have regardless of age, gender, ethnicity, or cultural background. These three human needs for autonomy, competence, and relatedness form the pillars of self-determination and underpin the change logic in motivational interventions.

Autonomy refers to an individual's need to experience him or herself as the origin of his or her behavior.

Competence is an individual's need to feel effective in whatever he or she is doing.

Relatedness is an individual's need to feel understood and cared for by others.

These three needs represent "psychological nutriments that are essential for ongoing psychological growth, integrity, and well-being" (Deci & Ryan, 2000, p. 229). Support and subsequent satisfaction of these needs provides a higher quality of psychological energy that is predicted to, and has been empirically confirmed to motivate the initiation and long-term maintenance of health behaviors. Content and interactions intended to facilitate behavior change, particularly in the long-term, is best when guided by techniques developed by SDT researchers and practitioners.

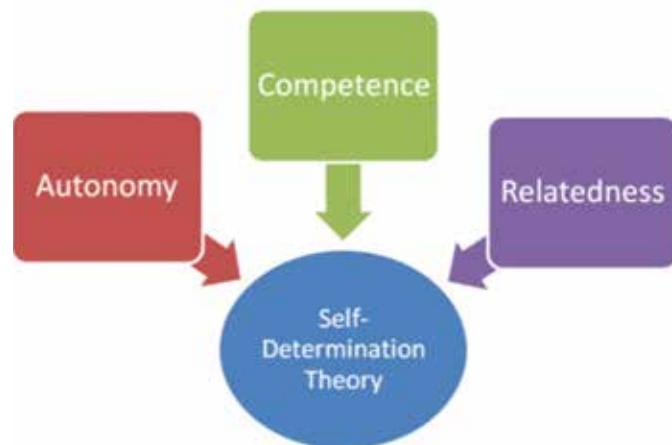


Figure 1. Elements of Self-Determination Theory

Source: Christina Donelly, Jtneill - own work, CC BY 3.0, <https://commons.wikimedia.org/w/index.php?curid=11946408>

Content Strategy for Engagement

Health Care Implications

To engage patients in the health care space, many providers rely on Self-Determination Theory. They employ shared-decision making with patients to provide autonomy. They train patients or offer outside education to ensure competence. And they display empathy, engage family members, and gather patient histories to promote relatedness.

Some models of care are based solely on Self-Determination Theory. In 2008, Richard Ryan, Heather Patrick, Edward Deci, and Geoffrey Williams conducted a review of health interventions based on Self-Determination Theory which indicated positive outcomes. More recent studies, including a 2012 meta-analysis that identified 184 independent data sets from studies using Self-Determination Theory, suggest that models based on the theory correlate to positive behavioral health outcomes (Deci et al., 2012).

Challenges and Opportunities in Health Care

The advent of digital platforms and mobile devices has ushered in a new era of health opportunities. In particular, digital health provides opportunities to combat three challenges the health care world is facing:

1. High health care prices
2. Poor care coordination
3. Chronic condition management (Hixon, 2014)

Digital health provides more opportunities for patients to view coverage and pricing options. It allows for increased care coordination through the use of Electronic Health Records (EHRs), which share patient data with other providers and specialists on the patient's health care team. And as digital applications are developed, patients with chronic conditions receive new and improving options for care management.

Negative Impacts of Digital Health

However, technology is not a silver bullet. When it does not consider the end-user's needs, digital health care can do more harm than good. Implementing EHRs and other care coordination formats can be costly for hospitals, and additional diagnostic testing opportunities can lead to higher patient costs. As hospitals and providers learn the new technology, there are unintended consequences, including occasionally lethal miscommunications, some

of which are discussed in detail in Robert Wachter's (2015) book, *The Digital Doctor: Hope, Hype, and Harm at the Dawn of Medicine's Computer Age*. Also, patient care is only improved by mobile applications if those applications are designed using evidence-based research and behavior change theories.

In mental health care, for example, there are over 100 apps available in the Apple App Store. However, most are untested, and some can actively harm patients (Anthes, 2016). The American Psychiatric Association warns providers to use caution when recommending apps, as many have "have never actually been studied or evaluated in feasibility or clinical trials" (American Psychiatric Association, para. 2).

Low Digital Engagement

In addition, while devices such as Fitbit claim to "engage individuals" (Fitbit Website, 2018, para. 4), more than half of Fitbit users stop wearing the product—and 33% of those are within the first six months (Patel et al., 2015). Clinical trials, such as an ongoing trial on Monitoring Physical Activity, use Fitbits as tools to gather data but do not rely on the device itself to engage the patient (Rhodes, 2017).

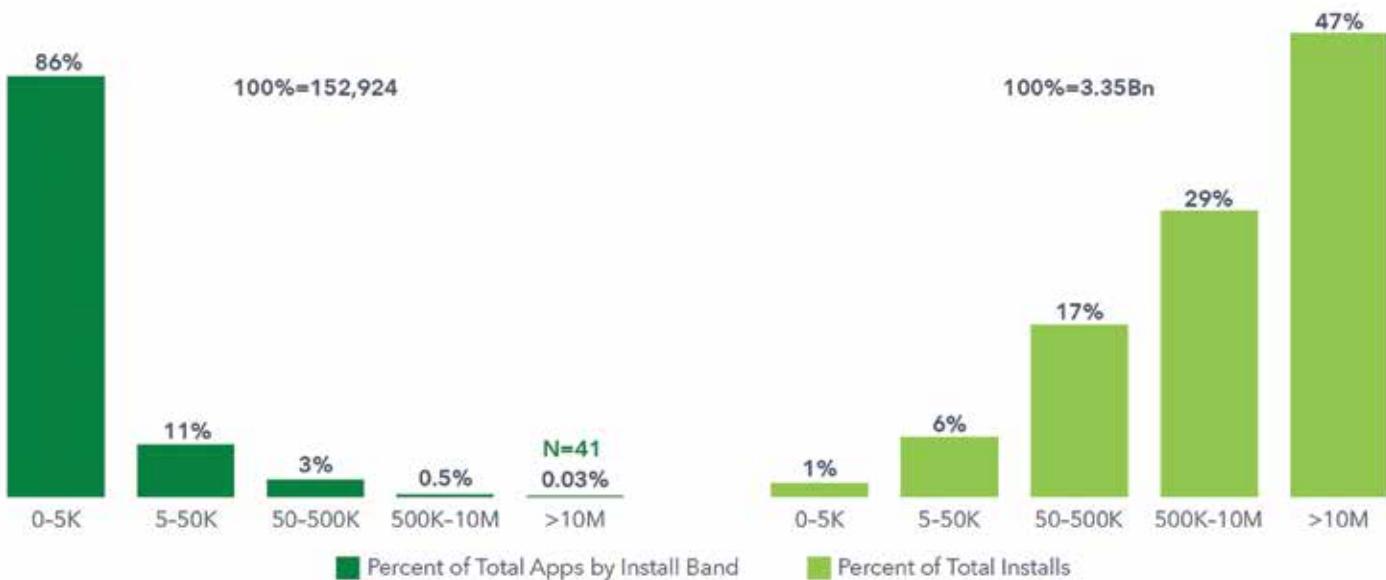
Even PokéMon Go, which engaged over 45 million users at the height of its popularity and increased outdoor walking for those users by over 25% on average (Althoff et al., 2016), lost 15 million users the next month (Sullivan, 2016). This is not surprising. Across the Android and Apple app stores, 40% of health tools are downloaded fewer than 5,000 times (IMS Institute, 2015).

Ultimately, an app alone is not any more engaging than a human. However, an app designed to utilize behavior change methodology has a higher likelihood of improving health care outcomes than an app designed without behavior change expertise.

Low Health Engagement

A 2002 study shows that 71% of engaged individuals maintain a behavior change for one week, and 46% continue to maintain after six months (Norcross et al., 2002). However, in health care, individuals struggle to remain motivated. Improved health outcomes are often not visible in the short-term, which can lead individuals to feel their goals are unachievable.

For example, though nearly 70% of smokers say they want to quit, less than 10% of them are able to



Note: Includes Android apps only. iOS data not available.

Figure 2. App downloads from IMS Health

Source: The Growing Value of Digital Health, IQVIA Institute for Human Data Science, November 2017.

each year (World Health Organization, 2018). When it comes to physical activity, up to 30% of individuals express no intention to exercise (Ronda et al., 2001; Rhodes & de Bruijn, 2013). In a 2015 study on completely unmotivated individuals, titled “Motivating the unmotivated: how can health behavior be changed in those unwilling to change?”, the authors concluded from these previous statements that “It is clear, therefore, that a large number of individuals are not motivated to engage in health-promoting behaviors and tend to be those most at risk” (Hardcastle et al., 2015, para. 2)

The challenge is one of an individual’s interest and engagement with their health: When patients are not motivated, a behavior change theory like Self-Determination Theory connects them to their internal values to uncover their motivation. For example, Self-Determination Theory style interventions might:

1. Help the unmotivated person shift their priorities, to focus on behaviors they are more motivated to follow-through on
2. Provide assistance, structure, and scaffolding to build skills and confidence on smaller tasks, working up to the larger goals
3. Rework the initial goals to be more achievable and highlight the smaller elements of progress
4. Understand the individual’s perspective and reasons for not wanting change, as well as what

he or she values that may encourage him or her in the future

For digital success, this requires a content strategy to develop a plan for appropriate delivery of motivational and behavior change techniques, in a supportive voice and tone, at the right moments and channels throughout an intervention.

Content Strategy as a Means of Engagement

The field of content strategy developed as a means to systematize content and thus improve communication. A 2011 survey of content strategy job ads found that content strategists were expected to have skills including “project management, training, leading and driving teams, client presentations, cross-department liaison and budget management” (Cullinan, 2011, para. 9). These are skills intended to shift principles and concepts into text and other content. In addition, a 2014 survey from the Content Strategy Alliance found that 55.3% of respondents work entirely digitally (Grindlay & Compton, 2014). In health care, this puts content strategists at the forefront of the shift from in-person experiences to digital interactions. Content strategists are designing strategies for interactions including:

Content Strategy for Engagement

- Nurse communication via live chat
- People purchasing health insurance through websites
- Patients receiving provider updates through Web portals
- Patients monitoring health conditions through digital apps

Success Metrics

In a 2017 project, Truth Initiative, a non-profit organization dedicated to eradicating smoking in the United States, redesigned their primary smoking cessation tool. They partnered with Mad*Pow Media Inc. to develop a behavior change strategy and content strategy that would bring the value of in-person support groups and smoking cessation interventions to the digital realm.

The previous incarnation of the online tool offered the same print tools that a clinician would offer in person. The clinician would ask probing questions, identify the smoker's core values (autonomy support), and reinforce his or her ability to maintain cessation (competence), as well as their reasons for not smoking during cravings (autonomy support). On-paper activities asked smokers to list values and interests, and suggested thinking about these things when a craving arrived. However, downloads were low, and without the human touch, site use overall was low.

Constructing a content strategy moved content elements to specific touch points at appropriate moments—such as when a smoker was dealing with a craving. By identifying and using the appropriate digital touch points and crafting language that mirrored provider language but was adapted as necessary for digital delivery, the tool became more usable. Over the course of six months, returning users increased from 35.66% to 37.98%, online community support users increased from 19% to 27%, and users identifying their reasons for quitting increased from 3.13% to 46.98%. All metrics point to increased user *autonomy*; community use and identifying reasons for quitting also correlate to *relatedness*.

Similarly, in 2016, corporate health provider New Ocean Health Solutions launched their new employee health and wellness platform covering lifestyle and prevention behaviors, chronic condition management, and mental health treatments. The app was developed with Mad*Pow to deliver up-to-date, evidence-based interventions for self-care and principles from

Self-Determination Theory to initiate and sustain behavioral changes linked to outcome guidelines. The user experience was developed with a content strategy, so as to connect scaffolded treatment pathways and relevant content to individual needs. Content was designed to provide:

- Evidence-based guidelines and self-care treatment pathways
- Short- and long-form educational content on a condition, treatment, or recommended behavior, along with easy-to-start scaffolded behavioral skills training to support and build *competence*
- Barrier identification and problem-solving tips, and activities to further support *competence* where individuals might face challenges or set-backs
- Multiple goals or ways to achieve a goal that employees could choose from as well as an interface that allows for exploration, discovery, and customization to support *autonomy*
- Tips and advice for how to talk with an employee's care team or social network to help maximize his or her support and success (*relatedness, autonomy, competence*)

After one year, 96% of employees surveyed reported a positive view of the app's ability to identify their needs (Mad*Pow, 2018). Additional qualitative feedback saw comments including "first [health assessment] in over 30 years in the industry that felt as if it was for me and not my employer" (Mad*Pow, 2018, para. 16).

Table 1. Truth Initiative Engagement Metrics

Metric	Before Redesign	After Redesign
Percent of Users Opt-In to Text Communications	64.51%	76.43%
Percent of Users that Set a Smoking Quit Date	64.22%	68.44%
Percentage of Users that Designate Reasons for Quitting	3.13%	46.98%
Percentage of New Registered Users that Visit the Online Support Community	19%	27%
Percent of Users Returning to the Site	35.66%	37.98%

Methodologies and Tactics

Unlike fields within the sciences, content strategy does not have clinical trials to demonstrate efficacy of methodologies. However, there are recognized methodologies used to tactically align content for engagement.

Journey-Driven Design

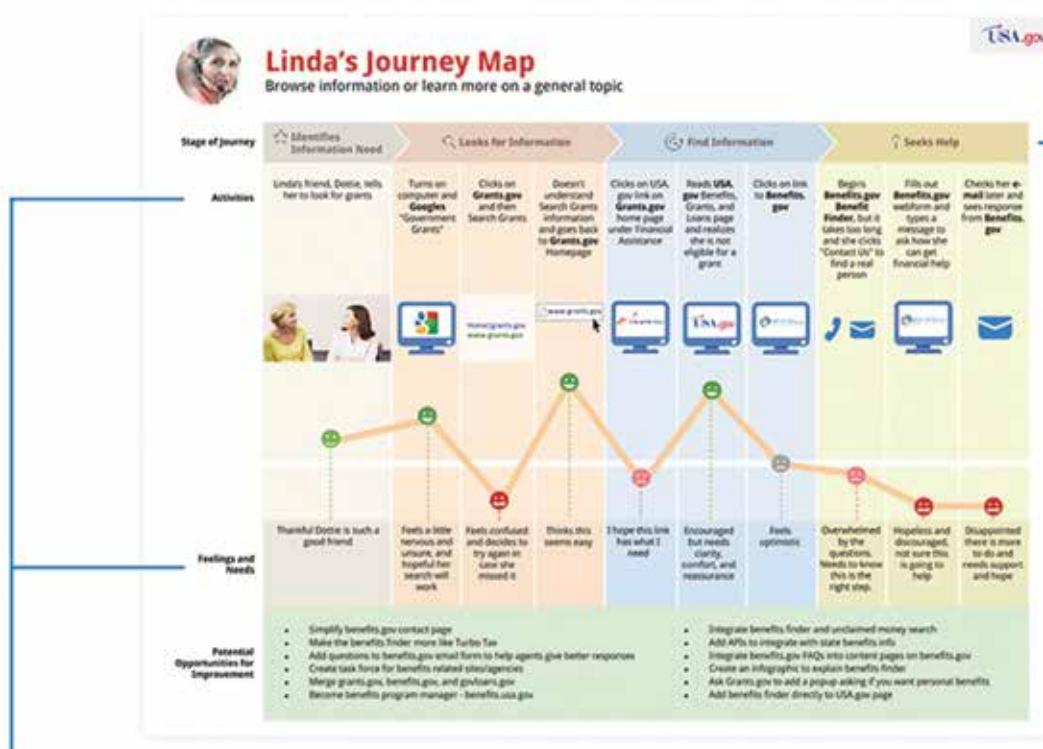
Journey-Driven Design promotes the need to illustrate the path a user (patient) takes to accomplish a specific task in order to understand the user's needs (Mesibov and Levin, 2017). The journey designed may be as

broad as the path from diagnosis to recovery, or as detailed as the path from scheduling an appointment through to follow up.

Although there are multiple approaches to journey maps (Samadzadeh, 2016), all are useful in identifying *touch points* where the user will have some connection with an external source. Although this is not necessary for behavior change, it is useful as a reminder or follow-up, in much the same way as a human would reach out in face-to-face interactions. This can be as simple as a call to let the patient know their test results are in, or as complex as a notification recommending a change in treatment, based on self-reported or tracked data.

Persona's Narrative

Phases are specific to the persona's goal(s)



Primary focus is on the persona's unique experience

Figure 3. Persona Narrative Journey Map

Source: Screen capture incorporates a USA.gov persona in Journey Mapping the Customer Experience: A USA.gov Case Study / DigitalGov / U.S. General Services Administration (GSA). Image created by Shahrzad Samadzadeh, incorporating a presentation slide about one of USA.gov's personas, Linda, a 50-year old widow in Florida with no children who wants to browse information or learn more on a general topic.

Content Strategy for Engagement

Creating a journey map for device usage also identifies the types of content appropriate for the patient. For example, if the journey shows patient fear and uncertainty leading up to an appointment, education and reassurance is required. This, in turn, impacts the likely frequency and style of communication between the device and patient. The patient's journey may require daily app usage or may suggest that weekly is more appropriate.

Personalization

Personalization as a methodology is well-understood to be a promising means of engagement and increased customer satisfaction among digital users (Kaneko et al., 2018). Tactically, personalization can be developed through a personalization matrix, as well as implementing technical business rules to create more complex personalization through AI. Both options promote creating a series of interactions that react to and complement a user's individual behaviors.

If personas are available, this can be one method for beginning personalization. Patients exhibiting similar behaviors can be grouped into a behavioral persona, and a personalization matrix will allow the content strategist to connect behaviors to appropriate content, written tone, and pillars of Self-Determination Theory.

Digital Anthropomorphism

Creating a digital voice is a common task for content strategists. The voice, ideally, represents the brand attributes and adds a consistently human aspect to otherwise potentially dry interactions. As health care welcomes personalization, the need for a seamless experience from digital AI to human caregiver increases. By anthropomorphizing digital applications and devices, designers humanize the interactions and increase trust (Waytz et al., 2014; de Visser et al., 2016).

Anthropomorphism can specifically foster *relatedness*, one of the three pillars of Self Determination Theory. For example,

- **Trust:** A human-sounding voice increases the feeling of being cared for by others, particularly if the tone provides a genuine sense of caring and warmth, irrespective of the individual's progress. To that end, the voice should avoid expressions of disapproval, judgment, or blame.

- **Personalization:** An anthropomorphized health application helps the individual to feel heard. The voice can be used to acknowledge the user's feelings, use the person's name, and reflect back other personal data to encourage the user to feel the application has a specific interest in him or her.
- **Acknowledgement:** An appropriately created voice will also foster relatedness through *reflective listening*. The voice can ask open-ended questions and summarize or present back information provided by the individual.

When designing to promote behavior change, content strategists craft a voice that echoes this and the other elements of Self-Determination Theory. Between the appropriate overall voice, and specific tones developed for specific scenarios, an anthropomorphized website or application supports autonomy and increases the individual's sense of competence.

Concluding Opinions

Behavior change theories, such as Self-Determination Theory, can successfully promote motivation and improve health outcomes. In the digital realm, content is the natural connector, taking on the role that providers naturally take in face-to-face situations. Content strategy puts those connections in place.

The examples shown display the impact content strategy can have on behavior change-based digital interventions. If more content strategists begin to study behavior change methodologies and join behavior change specialists and health care professionals, the applications developed for health care and other industries can be more consistently engaging, effective, and long-lasting.

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Visualizing Content Strategy for Complex Content Ecosystems

By Marina Sedmak, Kathleen Ruggeri, Robin Boldt, Sabrina Dennis, and Julianne Forsythe

Abstract

Purpose: In complex content ecosystems, a consumable, visual view of the content landscape is necessary to describe a strategy for future content development. This article explains our content landscape, the rationale behind the development of a new visual method to represent that landscape, and the resulting analysis to support an overall content strategy.

Method: We present a technique that we used to analyze our complex content ecosystem of technical content and our approach to develop a consistent content strategy across documentation sets for diverse, yet interrelated products. We analyzed approaches that describe content strategy tools and processes for websites and for content reuse at the topic level, but found those lacking in support for complex technical content. Using that background, we designed our own tool and processes to support content analysis and strategy at the publication level. We developed the concept of a deliverable map, a visual representation of our content landscape by product category. The deliverable map became a highly effective tool in our efforts to define, communicate, and sustain our content strategy.

Results: Multiple deliverable maps show existing content and relationships, and provide opportunities for different levels of analysis and stakeholder engagement. This analysis supports development and maintenance of a content strategy that meets business goals and that drives content across multiple outputs. The deliverable maps communicate current state, show the evolution of deliverables, identify content issues, and guide future planning.

Conclusion: While the content in a content strategy initiative is typically thought of as small topics or webpages, it can be traditional publications also, such as technical manuals. Established content strategy practices can be adapted and successfully applied to content at all levels of granularity to meet the unique requirements of the organization. Spreadsheets are often the primary tool for documenting current-state content and planning future strategy. However, replacing spreadsheets with visual maps can be a more effective approach for complex, interrelated content landscapes. The interactive map becomes an invaluable tool to help create, communicate, and sustain a cohesive content strategy.

Keywords: content strategy, deliverable map, publication landscape, content inventory

Practitioner's Takeaway:

- Presents a deliverable map as a visual method to represent a complex content ecosystem and high-level content strategy.
- Summarizes different levels of analysis that are based on the data that is captured in a deliverable map and the resulting relationships.
- Discusses how the analysis of a deliverable map supports the overall content strategy.

Visualizing Content Strategy

Introduction

Rockwell Automation¹ (NYSE: ROK, <https://www.rockwellautomation.com>) is the world's largest company dedicated to industrial automation and information. Rockwell Automation comprises multiple business units that make nearly 400,000 unique products, both hardware and software, and mobile applications. Our control systems and components at Rockwell Automation are used in a broad range of applications, including automotive assembly lines, theme parks, breweries, pharmaceutical manufacturers, water treatment plants—virtually anywhere products are being manufactured and processes are being controlled. Along with maximizing productivity, our products and solutions help ensure the safety of people and processes in production environments. Our product and content ecosystems are broad and deep, and both need to endure for a long time. Customers rely on our products to be actively supported for decades to help them manage complex and high-volume production processes around the world, even while we develop new and exciting technologies.

To support customer needs effectively, technical communication management recognized a need to drive a more consistent content strategy across the entire product portfolio. Best practices dictate that planning for future content strategy begins with an understanding of existing content. Therefore, management challenged a small team of information architects within the department to develop a comprehensive view of the current state of the content landscape as the first step toward a future, unified content strategy. This effort resulted in the development of deliverable maps that visualize a complex content ecosystem. These deliverable maps are now integral to our progress toward a sustainable content strategy across our complex and expanding product portfolio.

Content Challenges

Although some of our technical content is published to our website or as online help, most is published as long-form publications, PDF files, with over 12,000 actively managed publications. Information developers produce an average of 20,000 pages of new and updated technical content per year. This content is complex and covers user tasks ranging from initial product selection and system design to installation, operation, and

maintenance of automation systems. The information development teams responsible for this content report to multiple managers and are dispersed across eight different locations.

Several years ago, faced with managing content for an ever-growing product portfolio, Rockwell Automation established the role of information architect within the Technical Communication department—a role that is not typically found within documentation teams that produce PDF, book-based content. It was clear that technical communication managers were juggling too many disparate content projects to effectively create and manage consistent content strategy across the entire product portfolio.

In *Information Architecture: For the Web and Beyond*, Rosenfeld, Morville, and Arango offer this definition of information architecture: “The art and science of shaping information products and experiences to support usability, findability, and understanding” (Rosenfeld, Morville, & Arango, 2015). Although usually thought of in the context of Web content, Rockwell Automation applied the practice of information architecture to content across our technical documentation landscape. However, even with the support of the information architects, the sheer volume of content remained a challenge.

Because simple products need only a few pages of content, whereas complex products require hundreds of pages of content in multiple publications, technical communication managers struggled with how to explain the depth, coverage, and evolution of our content across the product portfolio. They wanted an easily consumable view of our content landscape.

And because our many products are designed to work together, a significant amount of technical content is meant to intersect; but that content can also overlap. When the same content is created for multiple deliverables by multiples authors, it can result in conflicting user experiences. When the same content is rewritten, variations invariably creep in and cause confusion for users (Rockley & Cooper, 2012). Minimizing content repetition and achieving consistency across the product portfolio was a challenge.

And because of the longevity (20–30 years) and continuous development of Rockwell Automation products, the content is subject to significant changes. Without sufficient metadata to describe this evolution in our publication management repository, we lose historical context. For example, product evolution may

¹ Headquartered in Milwaukee, WI, Rockwell Automation employs approximately 23,000 people, serving customers in more than 80 countries.

drive changes, such as separating or combining content in novel ways; it is impossible to deconstruct those changes years later when a publication needs to be updated by a different information developer. This knowledge has always been tribal and, therefore, dangerously easy to lose.

Project Goals and Objectives

Understanding all aspects of current-state content is central to defining a content strategy for the future. It's important to know how much content there is, what it is used for, and if it supports user goals (Casey, 2015). A current-state inventory and content audit identifies existing content and content relationships (Casey, 2015), provides the baseline to help identify issues for further analysis (Abel & Bailie, 2014), and provides the foundation for an actionable content strategy (Halvorson, 2009). For our content, we needed an effective visualization to show not only the publications but, more importantly, their relationships to each other. This visual approach would ultimately provide a simpler and more consistent way for information architects and technical communication managers to analyze our content and extend our content strategy.

To present the current-state content landscape, the information architects focused on a highly visual approach: scannable, digestible, and easy to execute following a consistent pattern. The solution had to support these objectives:

- Consistency in content types, breadth, depth, and treatment across all products and teams
- The ability to communicate strategy within our distributed team and to business stakeholders

- Maintenance of a current view of the entire content ecosystem for hundreds of product families and thousands of publications with histories spanning decades

Methodology

Content strategy as a practice is relatively new and continues to evolve. Many of the available resources focus on Web content strategy and management. For the Web, content strategy typically addresses marketing content and brand messaging, with editorial calendars for content such as Web updates, social media, and blog posts. From the technical communication perspective, content strategy typically addresses planning for reuse of content chunks or topics across relatively homogenous content sets. As the information architects searched for guidance and best practices, nothing exactly matched the project goal: Create a highly visual representation of our extensive current-state PDF content landscape that could be leveraged to capture, inform, and extend our content strategy going forward. As a result, our implementation is unique, but our methodology is based on the basic principles of defining, building, analyzing, and extending the content strategy (Figure 1).

Most important in the process was defining the scope of products and publications, as well as the data about those publications that was important to capture. Then, we conducted the content inventory, built the solution, and validated both the information and the format before analyzing the results to extend the content strategy. Along the way, we were careful to consider the needs of all stakeholders.

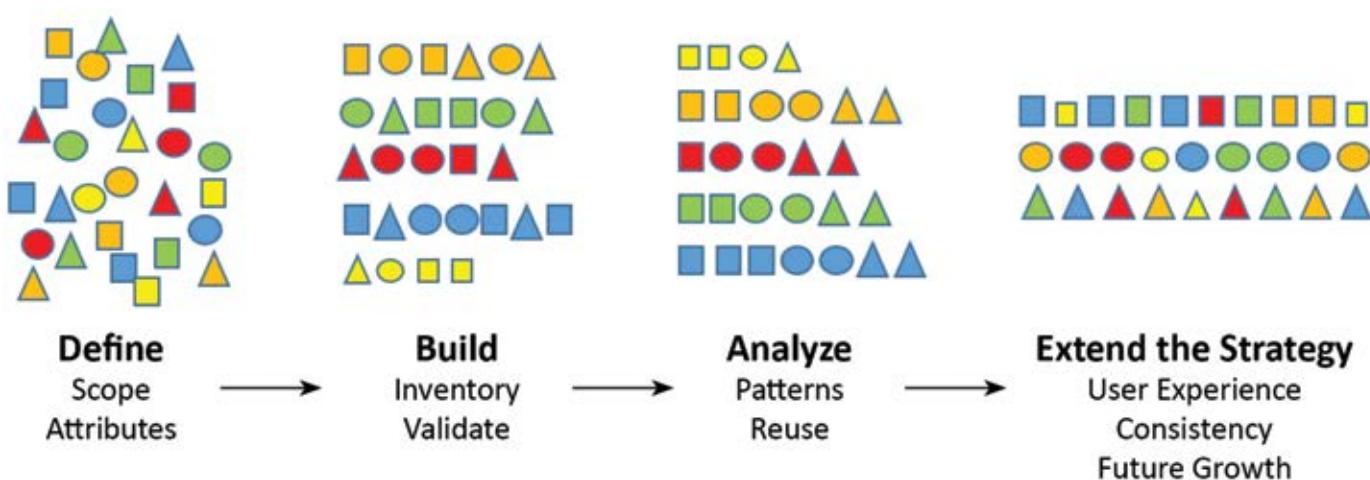


Figure 1. Traditional process to develop a solution

Visualizing Content Strategy

Solution

To meet the project requirements, the information architects created the concept of a deliverable map to capture the content and strategy at the product category level (Figure 2). A deliverable map records publications and their relationships to each other, a brief history of changes, and attributes relevant to our content.

Although the deliverable maps were created primarily for the information architects to visualize and maintain consistent and coherent strategies, the deliverable maps were also expected to be valuable tools for the technical communication managers to assist with project planning.

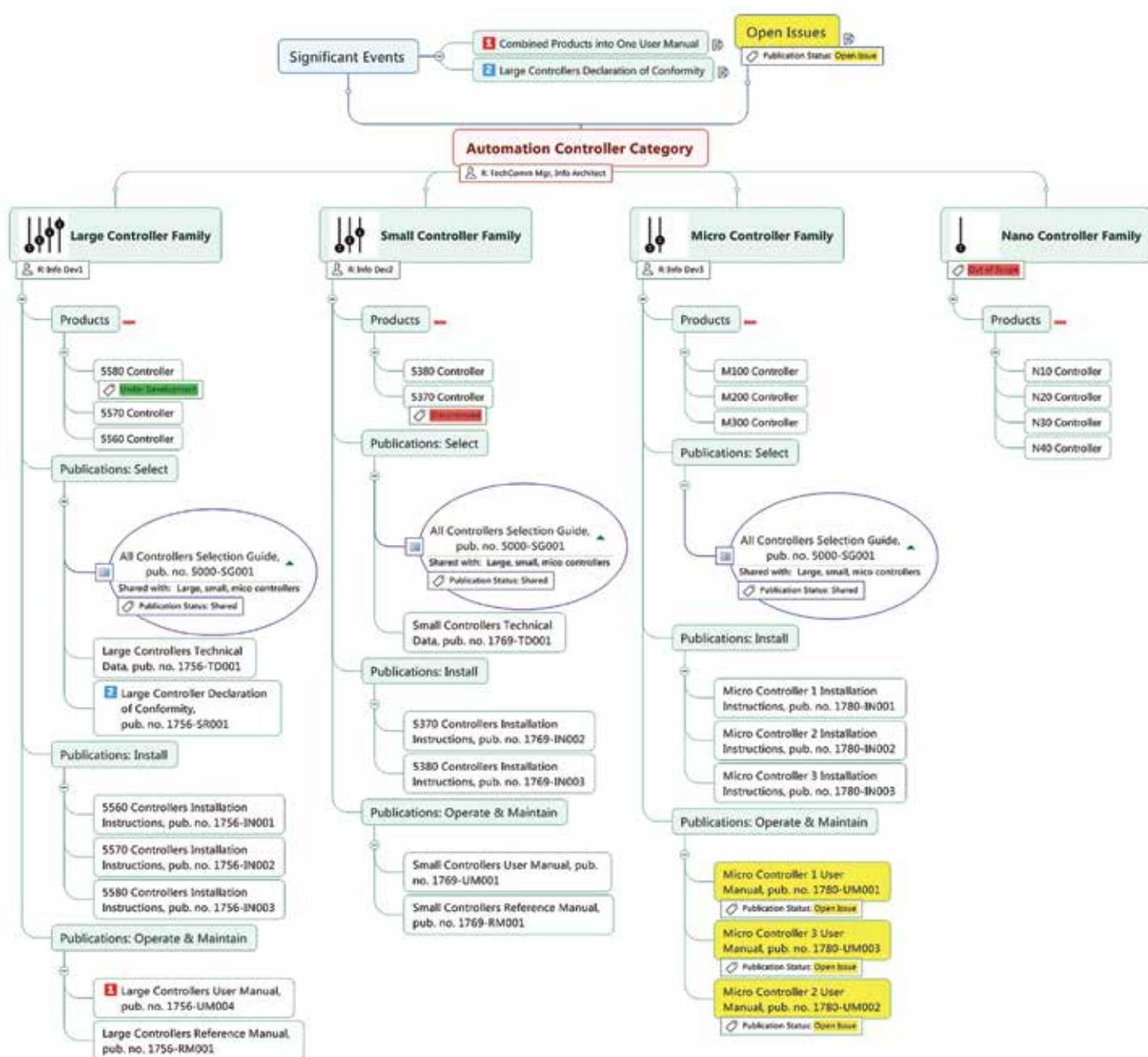


Figure 2. Sample deliverable map for a product category with multiple product families. Each product family has a set of publications. The deliverable map shows the relationships between the publications in each product family.

Define the Solution

To plan and build out the deliverable maps, the information architects had to determine which products and related publications were in scope, decide what attributes related to the products and content were most valuable, and develop a visual format.

Determine Scope

A website is often the starting point for a content strategy project. The parent site, content sections within the site, and pages within each section can help define the scope of the project (Halvorson, 2009). Content types, such as PDFs and videos, are recorded in the framework of the website (Halvorson, 2009). With our focus on PDF publications, we needed an alternate organizing structure for our content to clearly define what was to be in-scope. We looked at these factors:

- Volume and complexity of existing content
- Sheer number of products and the interactivity between them
- Longevity of our content
- Geographically dispersed content ownership

The Rockwell Automation product taxonomy was a logical starting point for scoping the content project (Figure 3). This taxonomy is robust, well-tested, and carefully maintained, providing a reliable framework for the deliverable maps.

The taxonomy divides the product portfolio into 19 high-level product categories, ranging from relatively simple components, such as push buttons or relays, to highly complex programmable automation controllers,

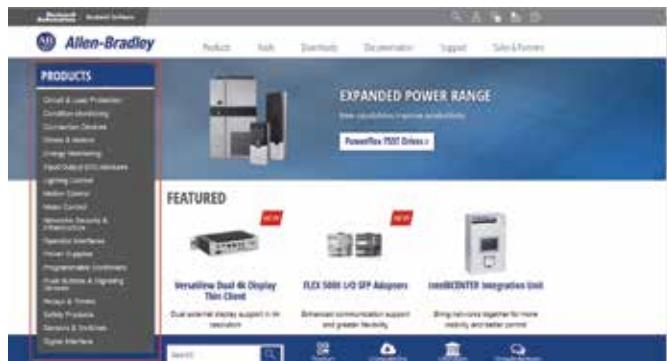


Figure 3. The product taxonomy from the Rockwell Automation website provided a starting point for scoping the project.

to software products. Within these high-level product categories, there are hundreds of different product families. The Technical Communication department creates technical content for most of these products but doesn't own the content for all of the product families due to the global nature of our company. To keep the scope more manageable, the information architects focused on the content for the products that are developed and maintained in North American campuses. Products documented by other technical writing departments, as well as marketing content for all products were deemed out of scope.

Reviewing the product lifecycle stage proved to be another important scoping technique. Focusing only on active and emerging product families concentrated our efforts on the most current content. Content for mature or discontinued product families is stable and unlikely to require revisions or further analysis.

Like most large companies with broad product offerings, Rockwell Automation uses multiple technical publication types. These include familiar types, such as Selection Guide, Installation Instructions, User Manual, and specialized publication types, like System Design Guides, that are used less frequently. Each publication type has a content model and is designed for different content, purposes, and audiences. Not every product uses the same publication types, so the scope of the deliverable maps included which publication types are used by which products and what purpose (user task) they address.

Even though some of our publications are translated into as many as 17 languages, limiting the scope to the source English content would keep maintenance manageable. However, as we evaluated publications, we realized that there was valuable history on translations that we included wherever practical. For example, some of our installation publications are multi-lingual—English plus additional languages in one publication. Identifying that a publication is multilingual is important because any revision to the publication requires planning for the translations, as well as the English content. In addition, regulatory concerns sometimes require publications in a particular language in order to certify a product for sale in countries outside of North America. By noting the reason for a specific translation, we capture a unique requirement that impacts specific product families.

Visualizing Content Strategy

Decide What Information to Capture

After deciding on the products and content in scope, the information architects determined which attributes were pertinent. We researched examples of Web content inventories that recorded attributes such as Web URL, references/links to the content, usage (Web traffic), content structure, and search engine optimization (SEO) data (Casey, 2015). We also researched topic-level inventories for content reuse that mapped where content elements are used—for example, manual, website, press release, and brochure (Rockley & Cooper, 2012). Additional research showed variations of these approaches, but nothing that would scale up to the volume and depth of our content landscape. Our project required that we define a unique set of attributes to help us understand our content ecosystem at a publication level.

The information architects defined attributes relevant and common to a comprehensive content inventory, such as ownership, history, status, and content purpose (Casey, 2015). Multiple attributes related to ownership identify areas of responsibility for content development. These included information architect (owns the content strategy), technical communication manager (manages the resources), and information developer (creates and maintains the content). The original attribute set included engineering resources (product development) and manufacturing resources (manufacturing facilities), but these attributes are difficult to maintain. Engineering departments reorganize and change product focus as companies grow. Manufacturing facilities that are associated with specific products also change over time as products mature. Capturing and maintaining engineering and manufacturing resources was time-consuming and proved irrelevant to our content strategy, so those attributes were removed.

To record the history of how publications have evolved, we included a Significant Event attribute, to capture events such as changes to publication types or content reuse, and the rationale behind those changes. The deliverable maps provided a way to record these changes that affect how customers access and use technical content, which would not otherwise be documented.

Attributes related to content status included:

- Publication Status (e.g., “In Progress”)
- Out of Scope (e.g., to identify product families that were nearing discontinuation and were not mapped)

- Open Issues (e.g., recommended changes for future content development)

Other attributes were relevant to the type of content within the publication or content purpose:

- In the Box (e.g., to identify a publication that ships in the box with product)
- Specialized Content (e.g., publications that require certification review before release)
- Shared Publications (e.g., a Selection Guide that covers multiple product families and would require atypical resources when being updated)

Develop Format

With the scope and attributes defined, the next step was to develop a format. For simpler projects, a structured spreadsheet is sufficient to capture the pertinent details about current-state content (Rosenfeld, Morville, & Arango, 2015). In fact, a Web search on content inventory templates shows many results that implement spreadsheets. Our work started with a spreadsheet, but showing relationships in a flat spreadsheet became impractical. Even with sorting, filtering, and using pivot tables, the spreadsheet wasn’t an ideal vehicle to visualize publications and the complex relationships that exist in our technical content.

To better show relationships, the information architects considered the concept of a mind map. According to Hopper (as cited in “Mind Map”), “A mind map is a diagram used to organize information visually. A mind map is hierarchical and shows relationships among pieces of the whole.” Our team had used mind maps to visually organize and structure information for other projects, so this was a logical approach to consider.

While mind maps are generally associated with brainstorming or organizing ideas, this approach was customized to capture existing content and tag content with descriptive attributes to show content relationships. We used commercially available mind-mapping software² to build interactive maps. The mind map software also provided styles, tags, and icons that we customized and applied to the publications in each map to visually represent attributes and content relationships. The mind map format offered an information-rich view of our current-state content that

² A Web search reveals many free, online, and for-purchase mind mapping tools, ranging in sophistication and functionality. We used Mindjet MindManager software for our project.

could be queried and filtered to provide insights that guide content strategy decisions.

Build the Deliverable Maps

Once the format was defined, the next step was to decide how to organize the large set of diverse products in the deliverable maps. Creating one massive map was not feasible, nor very functional, so the information architects again used the Rockwell Automation product taxonomy as an organizing tool. Each product category in the taxonomy represents a distinct type of product—for example, push buttons or motors or automation controllers—with unique content requirements and publication landscapes. Within each product category are multiple product families that share similar content and publications.

Creating a map for each category of the product taxonomy was the right level of granularity to visualize content relationships across multiple similar product families. Although each category roughly corresponds to one deliverable map, the breadth and depth of

some product categories required multiple deliverable maps to keep the content manageable. This granularity supports content analysis on a manageable scale and provides a structure that stakeholders would be able to absorb intuitively. Based on this analysis, we identified the need for 35 individual deliverable maps.

Create the Template

The work to create the deliverable maps was divided among several information architects. To improve consistency in treatment by different architects across so many product categories, we created a template (Figure 4). The template provided a hierarchical structure, identified how and where to add publications, and supplied pre-defined, formatted attribute tags, icons, and styles to be used in a deliverable map. A job aid provided detailed guidance on how to use the template, what information to capture, and how to represent content relationships.

Adhering to the template and job aid produced deliverable maps that were cohesive and provided a consistent level of detail. As the information architects worked through the maps, underlying product diversity

Deliverable Map Template Components

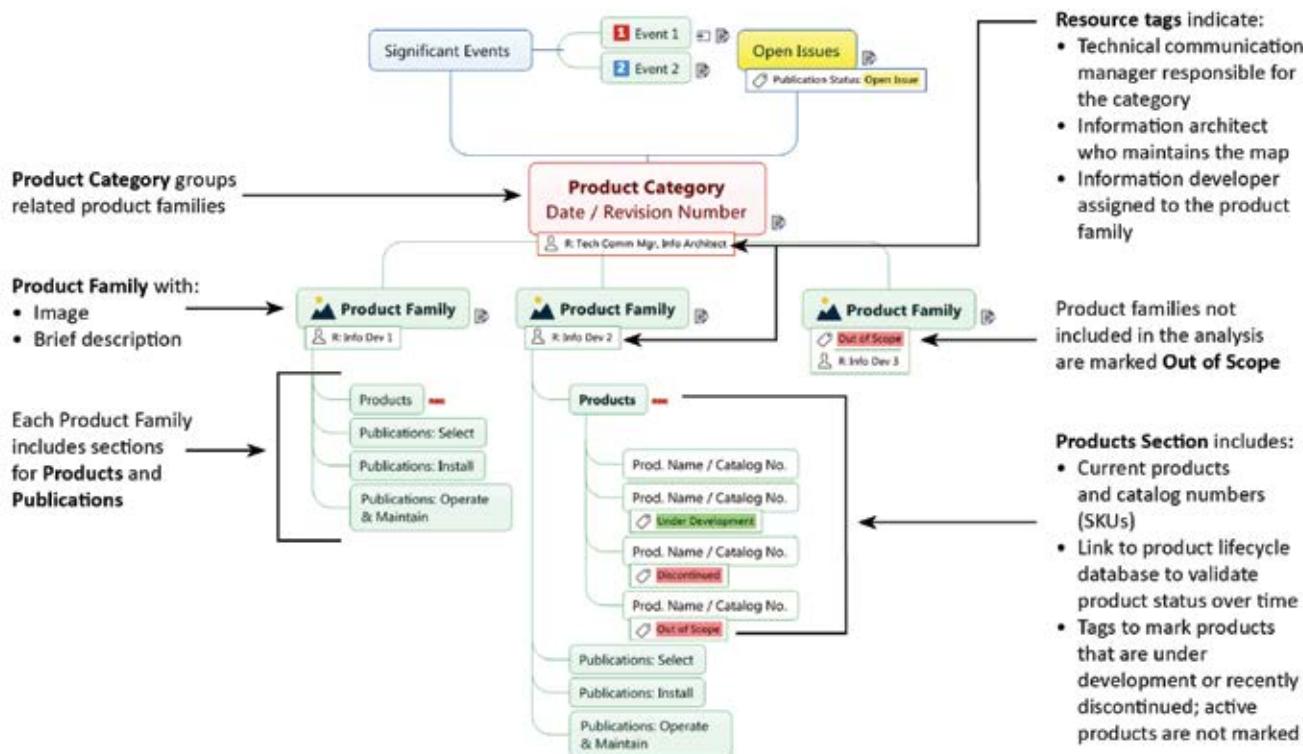


Figure 4. Basic components of a deliverable map are defined in a template. Standard sections and tags guide information architects for consistency in the scope of information that is documented in the map.

Visualizing Content Strategy

Deliverable Map Template Publications Section

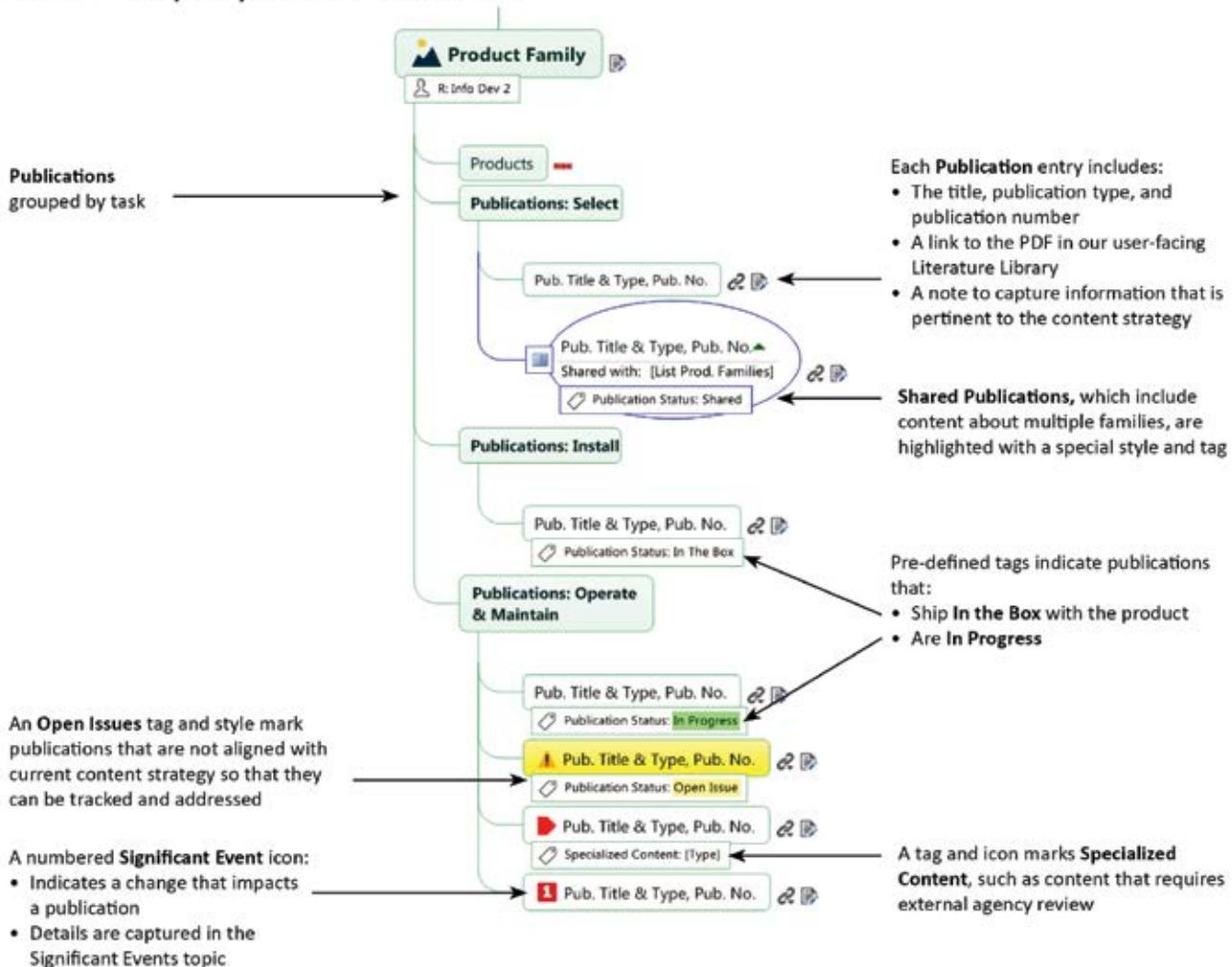


Figure 5. Publications supporting the product family are grouped by user task. Status tags can be queried to aid in content analysis. Styles and icons help technical communication managers scan the map and spot publications that require special considerations.

and complexity often resulted in unique attributes that were added to the template during the course of the project (Figure 5). The template also helped surface content patterns that were consistent across product families, uncover inconsistencies that could cause findability issues, and identify product families with unique content requirements.

Conduct the Content Inventory

The core of a deliverable map is the current publication landscape for the associated product category. Information compiled from various sources enabled the architects to construct a comprehensive picture of our content. These sources included:

- Reports from the publication management system to identify active publications and ownership of that technical content.
- Department project lists to identify new and revised publication projects.
- Metadata from the above systems to identify the attributes for individual publications.
- Interviews with information developers to track down missing or conflicting information.

As is typical with content inventory projects, this was a time-consuming process that took about six months to complete. Content inventories in Web-based projects can benefit from using a site crawler to import

the site structure and URLs to automate part of the process (Casey, 2015). We benefited from the reports and metadata from our publication management system and project list that automated the task of identifying in-scope publications. But most of the work to categorize the publications, associate them with the product families, add attributes, and build content relationships was manual.

Validate the Approach

Identifying the right stakeholders, getting them aligned with the project, and keeping them informed and engaged is crucial (Casey, 2015). Casey defines stakeholders as “anyone who can affect or is affected by your project” (Casey, 2015, p. 28). We identified two key stakeholder groups for the project: technical communication managers and information developers.

The technical communication managers were involved in the initiation of the project, setting the vision and goals for the project; we needed to make sure that they were aligned with our approach and that the deliverable map format met their expectations. The information developers would be essential in validating the completeness and accuracy of the information in each map, and an important resource for ongoing maintenance of the maps.

With these stakeholders in mind, the information architects shared a few initial drafts with them to validate the scope and direction of the deliverable maps before moving to complete all 35 projected maps.

This validation process helped foster a sense of familiarity, acceptance, and ownership of the deliverable maps and provided valuable feedback toward their development and use.

- Technical communication managers validated that the deliverable maps had the right level of information and that the deliverable maps would be useful tools for their planning and communication needs.
- Information developers validated the accuracy of data in the deliverable maps. The deliverable maps are actually their “story,” where their efforts in producing great content are documented. The information developers also provided historical “tribal knowledge” for how publications arrived at the current state. These project-related perspectives were embedded directly in the deliverable maps.

With management support, the information architects continued to work with information developers to validate each map throughout the development process.

Launch the Deliverable Maps

Upon completion of the deliverable maps, we posted them on a department SharePoint site. To aid in usability, the information architects created a job aid with examples on how to query and filter the data to support content analysis. The job aid included use cases for how technical communication managers and information developers could best use the deliverable maps.

The information architects also hosted hands-on demonstrations for the technical communication managers to show how the deliverable maps could answer common questions, such as:

- What are all current technical publications for a product family?
- Which publications are shared across product families?
- Does this product family have a selection guide?
- Are all of the publications for a product family following a consistent pattern to make them predictable for the customer?
- Which publications have issues that could impact the scope of a revision or the findability of information?
- Which publication types are required for a new product family?

Tags, icons, and pre-defined queries were built into the deliverable maps to simplify their use.

Sustain the Process

The deliverable maps were not meant to represent a single snapshot in time. Rather, they are living, current-state artifacts that must be maintained to continue to fulfill their function. The high volume of technical content that supports Rockwell Automation products meant that the effort to keep the deliverable maps current must not become a burden on the Technical Communication department. The result was a process of quarterly updates to the deliverable maps based on active project list data, publication release reports from our publication management system, brief interviews with information developers, and

Visualizing Content Strategy

early participation on product development teams. This process identifies new and obsolete publications with minimal disruptions to technical communication projects in progress.

Frequent consultation of the deliverable maps during project planning enables us to organically identify most product developments that result in updates to the deliverable maps or the potential creation of new maps for new product categories.

Analyze Deliverable Maps to Impact the Content Strategy

Content strategy is often described in the context of Web content and how it is structured and stored in a content management system. In her blog post, “What is Content Strategy? Connecting the Dots Between Disciplines,” Halvorson (2017) offers this macro definition: “Content strategy is an integrated set of user-centered, goal-driven choices about content throughout its lifecycle” (para. 10). She contends that “how you define content strategy for your organization depends ... on what you’re trying to accomplish.” On the most basic level, content strategy is an integrated approach to planning and delivering content (Halvorson, 2017).

Our Technical Communication organization has a robust publication management system and metadata strategy in place for PDF publications. Our content strategy does not address managing content from that perspective. Our focus on content strategy is about the analysis, planning, and delivery of content to support customer information needs. The deliverable map represents our content strategy; the deliverable map helps us analyze our content to make “user-centered, goal-driven choices” (Halvorson, 2017) about what we create and deliver.

The deliverable map, as a visual representation of existing publications and content relationships, provides opportunities for multiple levels of analysis. Regular review of the deliverable maps helps develop and maintain a consistent content strategy that meets business goals and that manages content across multiple publications. The visual format is easily consumable by information developers, technical communication managers, and other product stakeholders. The deliverable maps communicate current state, show the evolution of publications, identify inconsistent patterns in content or deliverables, and guide future planning. All

or part of a deliverable map can be shared with the large set of company stakeholders to support recommendations for creating new content or revising existing content.

Content can also be compared horizontally across the product families represented in a deliverable map to help verify that the right content lives in the right publications. Defining the expected or required content against the current state helps identify content differences, redundant content, and deviations from typical content types.

The deliverable maps make it easier to analyze publications for consistency across the same publication types, to maximize content reuse, and to minimize unnecessary duplication. The deliverable maps show where opportunities for improvement exist. Taking advantage of these opportunities results in more consistency, which, in turn, helps customers find the quality information that they need more quickly. The customer experience becomes easier and more predictable as customers research, select, and use our wide array of products. Following are examples of how we review and analyze the deliverable maps to evaluate alignment with content strategy.

Identify Content Differences

Publications in our content landscape support high-level tasks and span the full user information lifecycle. Tasks include:

- Product selection and system design
- Installation and configuration
- Operation and maintenance
- Product replacement

The information architects identified a core set of publication types with well-defined content models to support these user tasks. These user tasks are the same across our product portfolio, in spite of the diversity of the products. The standard set of core publications may vary between categories, but is typically consistent across product families within a category. In a deliverable map, publications are grouped by these high-level user tasks. Each product family in the map is expected to have the same core set of publications to support these tasks. An information architect or manager can scan all product families in a map to validate that each has the correct set of publications (Figure 6). The visual nature of the deliverable map makes content issues readily apparent. A deeper analysis

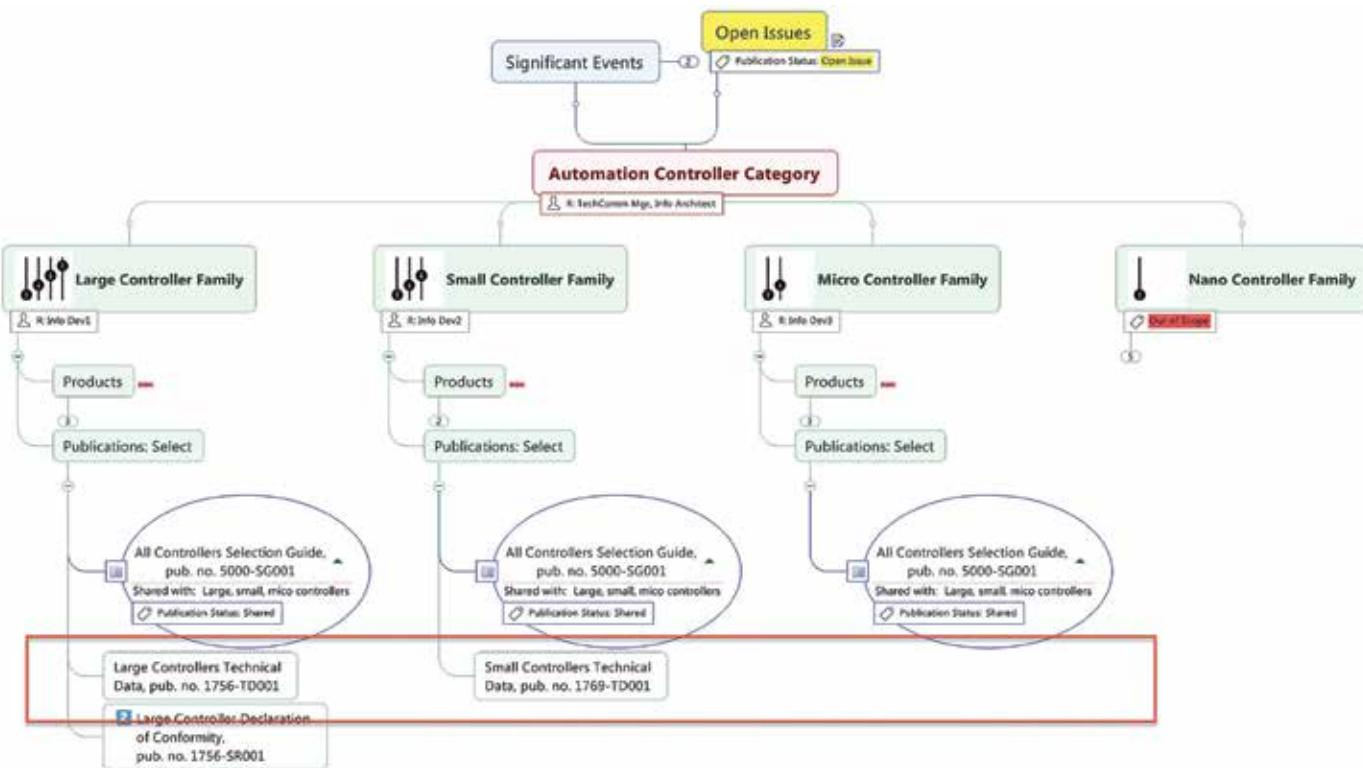


Figure 6. The comparison of publications across related product families shows possible content issues. In this case, the comparison shows a missing Technical Data publication type that is part of the content strategy.

of the map provides additional information that can be used to determine what is needed to bring the content in line with current strategy. Decisions are captured and maintained in the map as part of the content strategy.

Plan for Shared Content Dependencies

An important attribute in the content inventory is the identification of publications that are shared by multiple products, either in the same product family or across multiple product families. The deliverable maps identify shared publications by using a particular style so they are visually distinct from non-shared publications. Changes or additions to content in a shared publication have to account for all of the associated product families, which increases the complexity of projects involving these publications.

Figure 7 shows a portion of a deliverable map for the Automation Controllers product category. Within this category, there are three Rockwell Automation product families: Large, Small, and Micro Controllers. Each product family is owned by an information developer in a different geographic location. Mapping

the publications in this content ecosystem reveals that one of the publications, Automation Controllers Selection Guide, is a shared publication. It contains content for all three of the product families to help customers compare and evaluate products to select the best controller for their application. The blue oval format in the deliverable map visually indicates a shared publication. The technical communication manager can review the deliverable map, see that this publication is impacted by product developments in both the Large and Small Controllers product families, and schedule the changes to be made within the same publication update cycle. Content dependencies become transparent when exposed visually in the deliverable map.

Review Significant Events

Technical communication managers make decisions every time they plan content for product developments: create new publications, update existing publications, and sometimes move existing content to different publications. These decisions are based on product-specific requirements. Some of these decisions can also affect how

Visualizing Content Strategy

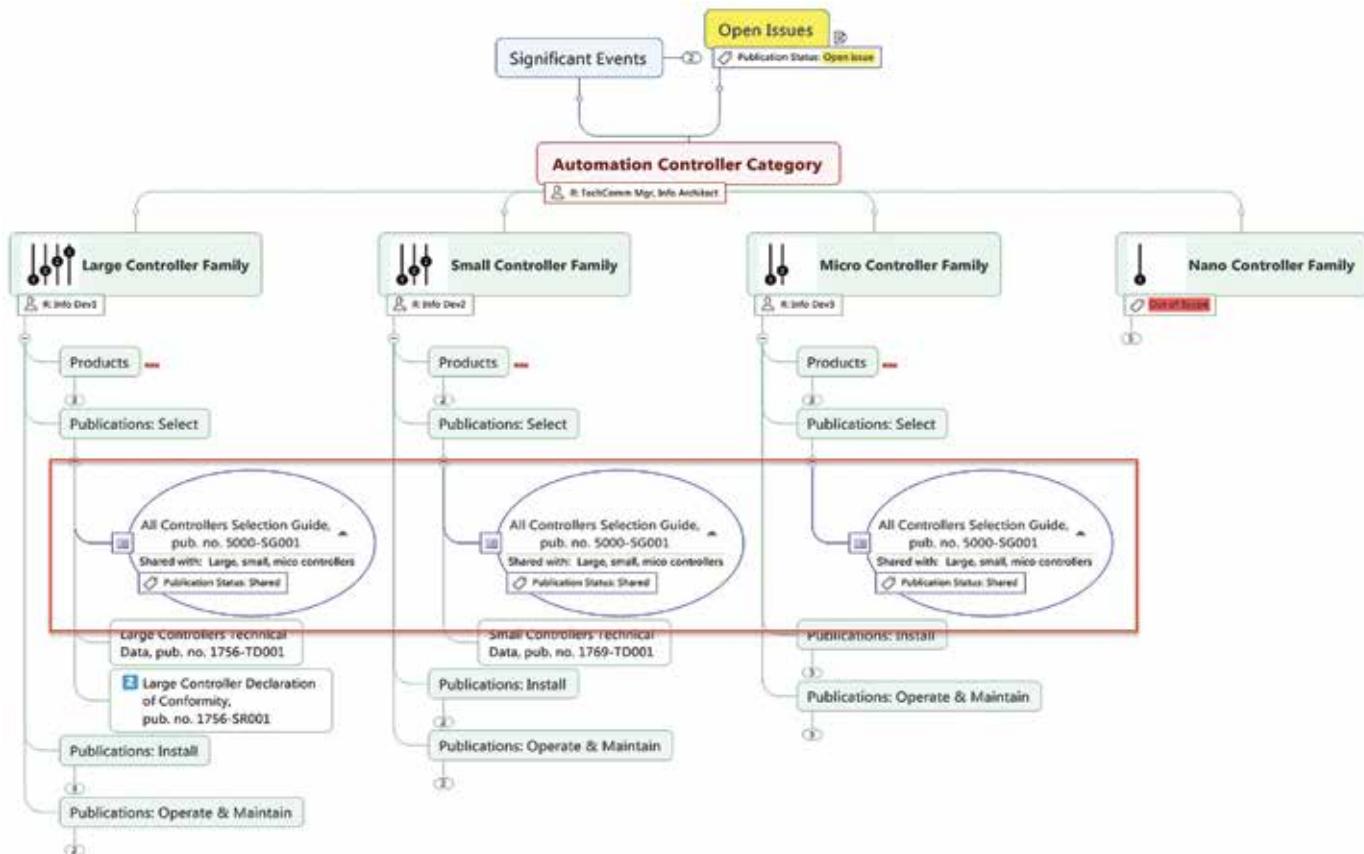


Figure 7. The visual style changes show how a deliverable map reveals content dependencies by identifying publications that are shared between product families.

customers access and use technical content. Recording these decisions as Significant Events helps maintain that knowledge and the reasons behind the decisions.

The purpose of Significant Events is to provide an explanation of how publications evolve over time, especially for more complicated publication sets, which include a variety of publications.

Figure 8 illustrates a Significant Event that changes the original content strategy to improve the customer experience. This example documents how content from several user manuals that have similar content about a product family or related families was combined into one common user manual. This improves the customer experience by placing related content in one location; the customer no longer has to search multiple user manuals.

Recording publication evolution preserves historical information and helps explain changes in the publication landscape for a product category. Significant events can be driven by product enhancements. For example, if a product is modified to allow repairs in the field, the publication set might expand to include a service manual.

Other types of significant events could be the result of internal business factors, such as a shift in ownership of a publication from one writing group to another.

Over time, strategy decisions can be based on past Significant Events that positively impact findability, usability, or maintainability. Conversely, the history of Significant Events can minimize the likelihood that we would repeat past decisions that negatively impacted our internal processes or the experiences our customers have with our content.

Review Open Issues

An analysis of the current state in a deliverable map can identify content issues that should be addressed. These issues could be misalignment with the content strategy, as well as missing, outdated, or redundant content. Publications with issues are marked with an Open Issue tag and highlighted with a color in the deliverable map. A description of each issue is also embedded in the deliverable map in a Notes section. To assist with project planning, the technical communication manager can

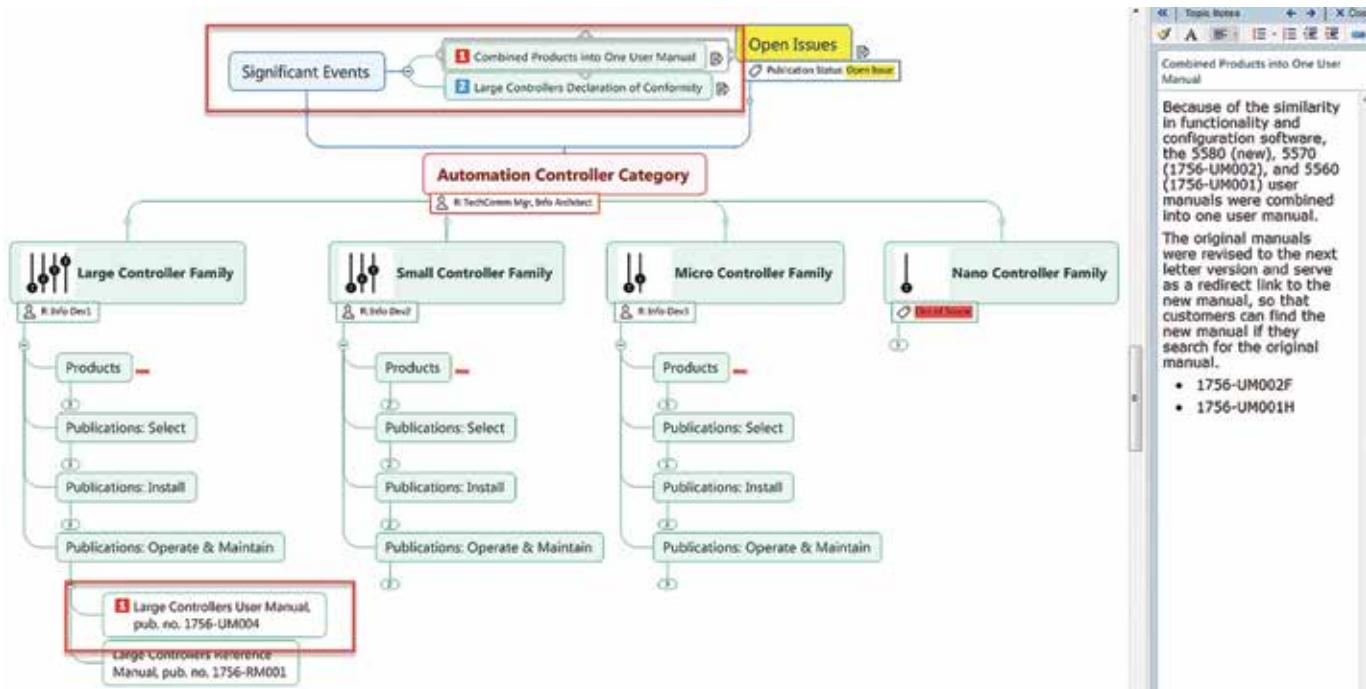


Figure 8. Snippet from a deliverable map that illustrates how we represent Significant Events. These Significant Events record decisions to help provide an explanation of how the publications evolved over time and guide future strategy.

filter a deliverable map to display any publication with an open issue. Resources can then be allocated appropriately. Critical issues can be addressed immediately, while others may be scheduled as part of a planned update cycle. Documenting known issues in this way helps bring and keep content in alignment with the strategy.

As an example, in the Automation Controllers deliverable map shown in Figure 9, the large and small controller products each have a single User Manual that covers all of the controller models in that family. In contrast, the micro controllers still have a separate User Manual for each model. The open issue tag and note indicate that the micro controller publications should be analyzed at the next revision to make them more aligned with the current content strategy.

Extend the Content Strategy

Information architects use the deliverable maps with marketing and product stakeholders to explain the content landscape for their products. This visual representation of their publications, which can range from a few to dozens, helps focus discussions that have future content strategy implications, such as how and where to document new products or

whether the information developer should restructure existing publications to incorporate new technologies. It's beneficial when stakeholders can visualize for themselves the impact of decisions on content strategy.

The deliverable maps help surface common themes across multiple, complex publication sets for a wide variety of products. Our analysis of the deliverable maps and knowledge of customer requirements leads to more complete and informed content strategies.

Information architects created deliverable maps to help technical communication managers and information developers understand and manage complex content strategies and interrelationships. These deliverable maps are a complex tool for large ecosystems of diverse technical content, and are not well suited to capturing content strategy for homogenous or small-scale content. To provide a valuable return on investment, they are best applied in scenarios such as these:

- Large volume of content—hundreds or thousands of artifacts
- Heterogeneous content without obvious or simplistic patterns of technical content
- No existing content management tool or process that describes the content landscape using built-in tools

Visualizing Content Strategy

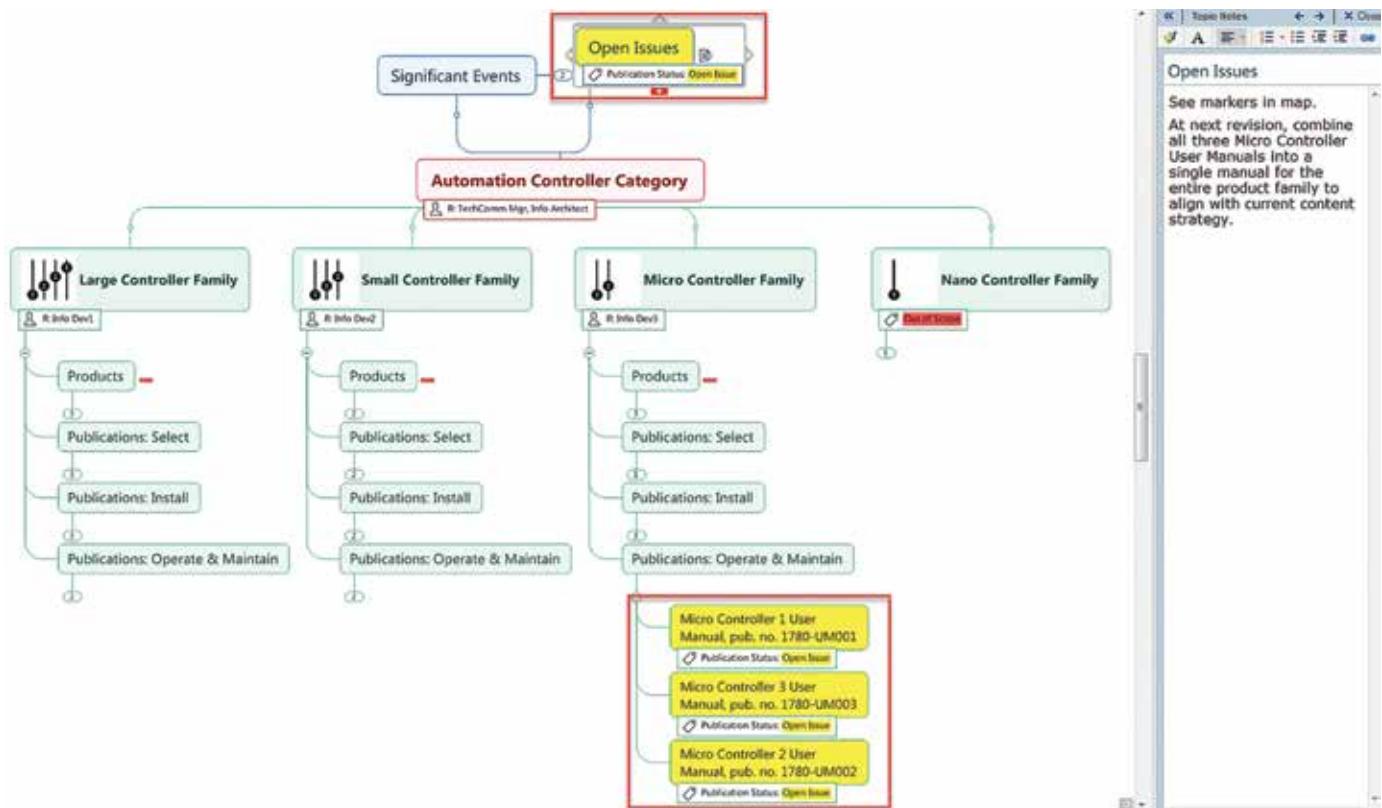


Figure 9. The Publication Status tag demonstrates how a deliverable map can be used to document open issues, such as content issues, redundant or outdated content, or strategy alignment issues.

- Significant longevity of content due to the nature of the subject matter (e.g., new content does not simply replace old content)

Figure 10 shows a portion of a larger deliverable map for a complex product category called Low Voltage Drives. The deliverable map shows various details about the publications for these products, documents strategy decisions, and displays this information visually. The interactive deliverable map can be filtered to show only certain types of content and relationships across multiple product families. Deliverable maps for similar products, such as Medium Voltage Drives, can also be compared for strategic consistency.

Another important touch point for the success of the content strategy is how customer and stakeholder feedback can be evaluated against the content ecosystem in a deliverable map. Content feedback comes from technical support calls, trade show interactions, and publication problem reports.

The feedback is reviewed based on the details in the deliverable map and documented to guide future content development to improve publications.

Conclusion

As Rockwell Automation products become more intelligent, providing more data about process, quality, throughput, and device health directly from the plant floor, our content continues to evolve and grow in complexity and quantity. Technical content must support our customers in their journey to achieve a Connected Enterprise—the convergence of plant-level and enterprise networks that securely connects people, processes, and technologies. This means that technical content must be consistently structured and easily findable in our large and ever-growing content ecosystem, and this only happens with a visible and clear content strategy.

The deliverable maps are our primary tool to support a consistent and predictable information

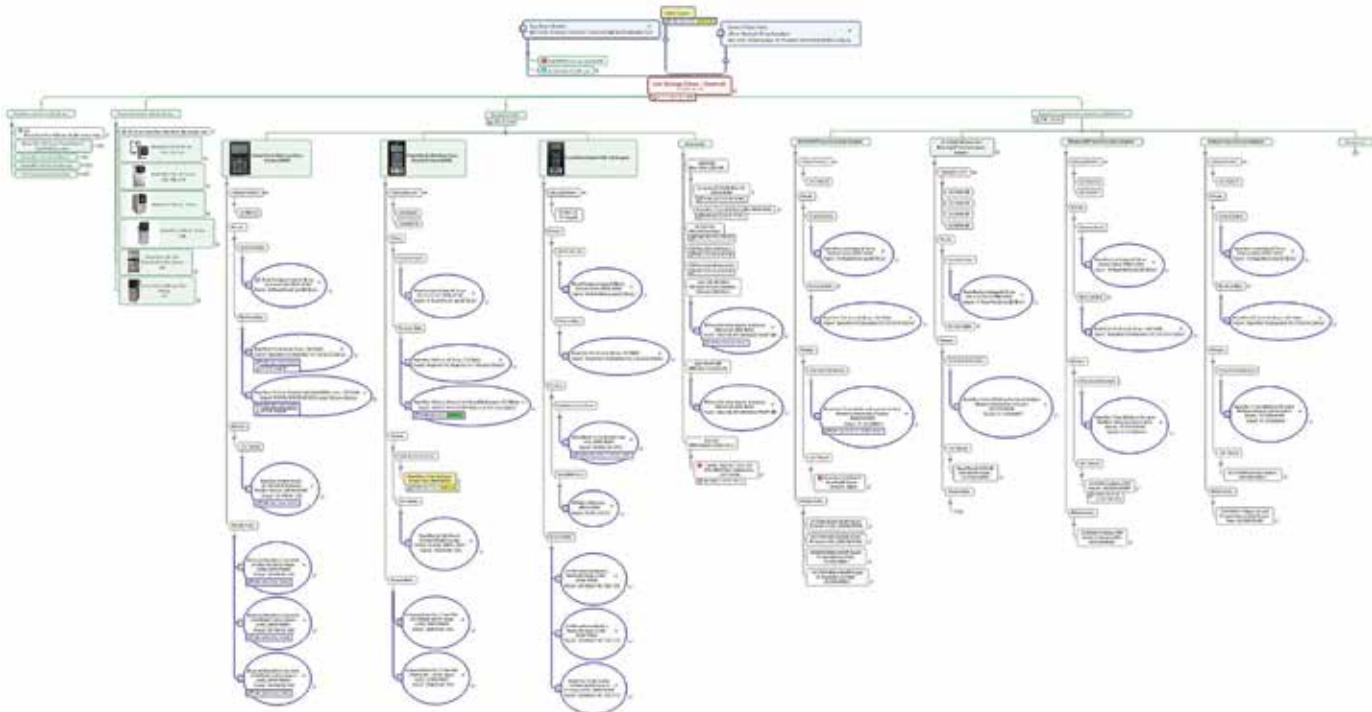


Figure 10. Although not readable, this deliverable map shows the visual complexity and extensiveness of our content. There are multiple interrelated product families and many publications within this product category.

experience for our customers. They make it much more likely that our content can answer the important questions customers have at all stages of their interactions with us. This visual representation of our complex content ecosystem gives all stakeholders a concrete way to experience and unify around the content strategy.

In our environment, the deliverable maps:

- Let information architects effectively plan future publication development and organize the right content in the right publications
- Support technical communication managers as they plan for the execution of a high volume of critical content with the confidence that the information developers are creating content consistently across product families
- Support information developers in their goals of creating accurate and high-quality content for our customers

Ultimately, product deliverable maps let our customers be more successful in finding and using our technical content as they work to accomplish their own critical goals.

Our research has shown that managing complex and unique content ecosystems requires innovative approaches to information architecture that can scale to the volume and depth of current content. Over time, as we explore new approaches to creating and managing content outside traditional long-form PDFs, deliverable maps will form the foundation for the discovery work required to evolve. We are much better prepared for our future with such a robust set of living, knowledge artifacts that can grow and adapt as we do.

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The Enterprise Content Services Organization

By Cruce Saunders

Abstract

Purpose: This paper analyzes the challenges confronted by existing content teams and proposes a future-state framework for orchestrating enterprise content services with a content intelligence program that spans disciplines and organizational silos. [A] proposes an organizational model to support content intelligence, that incorporates distinct Content Strategy, Content Engineering, and Content Operations practices within an overall Content Services Organization (CSO). To achieve an effective return on assets as part of an overall content strategy, enterprise content teams should build a unified management approach under a coherent Content Operating Model (COM).

Method: Content engineers at [A], the content intelligence service, evaluated publishing team structures and workflows across large-scale enterprise publishers, including in-depth investigations at seven of the largest global companies.

The approaches advocated in this article are a result of the [A] findings and resulting recommendations from these in-depth analyses.

Results: New practices are necessary across the enterprise, established within a continuum between Content Strategy, Content Engineering and Content Operations. A collaborative strategy and set of standards must be organized across authoring groups.

Conclusion: Directed by a new Global Content Operating Model (GCOM), a Content Services Organization (CSO), powered by the triumvirate of Content Strategy, Content Engineering and Content Operations, provides a balanced and effective path for large-scale publishing organizations to embrace the intelligence revolution.

Keywords: content strategy, content engineering, content operations, omnichannel publishing, content models

Practitioner's Takeaway:

Enterprise content teams should:

- Become unified under a common management approach – a content intelligence program
- Share clear goals, patterns, and standards
- Build a chartered, cross-functional CSO that incorporates Content Strategy, Content Engineering and Content Operations practices

To achieve coherence across content sets, we need:

- Active participation from multiple content-producing groups
- A content supply chain consisting of

content authoring systems, systems of record, and shared schemas represented by a Master Content Model® and Master Semantic Model

- To support integrated, personalized customer experiences and modular, standards-based content objects

All content business value emerges from content that:

- Flows between producers, consumers, and robots
- Moves and transforms, empowering organizations and customers
- Becomes machinable and assembled into multiple renderings

The Enterprise Content Services Organization

Introduction

We are standing in the midst of a significant revolution in the management of organizational knowledge and its expression as content. This revolution touches the publishing and engagement systems that handle content, the organizational structures and roles that produce and manage content, and every other part of the content ecosystem. Enterprise leaders face three mega shifts happening concurrently: a content revolution, a customer experience revolution, and an enterprise knowledge revolution.

Everything that relates to how we structure and communicate knowledge is changing, along with how that knowledge is consumed and used by humans and machines. For simplicity's sake, let's call this fundamental set of changes the "Intelligence Revolution."

Working with any form of enterprise content, whether technical communications, marketing, learning, or any other purpose for which groups author content, most organizations use systems and methodologies that evolved organically over several decades. And, even on cusp of the year 2020, many teams still operate using 1990's approaches to content. For example, critical source content may still be authored in an entirely unstructured form within Microsoft Word, manually being copied and pasted into a CMS within a WYSIWYG "page layout metaphor" then delivered into inflexible formats such as fixed 'static' HTML renderings or PDFs. Such static workflows were highly functional in the 1990s and 2000s but have become woefully inadequate today.

In addition to content inflexibility, enterprises also experience organizational inflexibility that make it difficult to accomplish the kinds of collaboration necessary to craft modular, reusable forms of content. Organizational roles, structures, and workflows have not kept up with the ever-changing demands on content.

Due to the exponential growth of, and demand for, volumes of relevant content, publishers now need smaller and smaller containers of content chunks structured and metadata-enriched for personalization and multifunctional use across customer surfaces.

The new content surfaces include, for example: personalized experiences by market or segment, voice conversational content experiences via assistants like Alexa, text-based chatbots, automated marketing and

email pipelines, on-platform content for software and game companies, the Internet of Things (IoT), augmented reality (AR), and wearables.

So, teams have been compelled to innovate radically different approaches to build to all these new surfaces. Yet, content professionals face a stark dichotomy between resources and requirements. Content creators have been asked to produce more than ever before, faster than ever before, all the while fundamentally changing publishing practices and workflows. And yet, teams have not been given the executive support, fiat, or resources to succeed. And organizational structures themselves have not caught up to the reality of omnichannel customer experience needs.

This is a time of profound soul-searching for enterprise publishers as industry revisits how everything is done. For the past 15 years, even within technical communications alone, teams have needed to reinvent themselves multiple times (Stevens, 2018). Now, the industry again finds itself amid reinvention, as old systems bog down and traditional organizational charts prove themselves outdated. The new world order of content has yet to arrive, and this intermediary period has motivated many in the industry to introspection, experimentation, and renovation.

Leaders have only just, in the 2017 and 2018 timeframe, begun sponsoring various initiatives aimed at enabling contextually-rich content experiences to intelligently flow to an ever-expanding landscape of devices and consumers over the past two years, an observation based on investment patterns among [A] enterprise clients.

Generational shifts in customer behaviors and expectations may be a key factor driving the move toward new content-driven, cross-channel customer experiences. The first wave of fully "digital people" (starting with Gen Z born from mid 1990s to the early 2000s) continues to enter the workforce. Millennials will represent nearly 75% of the workforce by 2025 (Luchs, 2017). These customers interact natively across multiple devices and consumption contexts and demand maximum efficiency to accomplish transactions.

Shifting customer demands, the risks of unintentional misinformation, the rate of market change, new conversational formats for interaction, and the explosion of new channels and devices all contribute to a demand for speed and ability within content sets. Because all content value emerges from motion

(content that flows between producers, humans, or robots), our organizations must now evolve to support content intelligence and flow.

The intelligence revolution inevitably is leading to structural changes within organizations, or at the least more committees. Everyone seems to see the need to re-engineer process and people workflows, in part, because the reality of the brokenness of today's status quo has become painfully evident as teams struggle to just barely keep up.

This article reviews a few emerging system models for organizational design as well as new alliances across teams and proposes a continuum of practices that need to exist within a new Content Operating Model to embrace the intelligence revolution: Content Strategy, Content Engineering, and Content Operations.

An Omnichannel Content Explosion

Many people within content-producing departments feel they are "dog-paddling" on a wave of unfathomable and unconstrained content factor growth.

In [A] findings, echoed in a 2018 Forrester study sponsored by SDL, internally reported frustrations include (Forrester, 2018):

- Inability to keep up with the growing appetite for content
- Inability to keep up with support for new content formats/types
- Complex workflows and approval processes
- Lack of automation/mostly manual processes
- Content delivery that is poorly coordinated across teams or business units
- Inability to keep up with the growing volume and complexity of content delivery
- Lack of structure/definition around content translation

Due to the nature of productive content, which forever seeks new channels, there are thousands of variants of content renderings for every new surface and digital space that emerges. What used to be finite documents are now many versions of articles, campaign landings, search results, social promotions, emails, product information resources, promotions, offers, commerce stores, syndicated publishing consumers, support topics . . . and endless copies of each.

As illustrated in Figure 1, at least seven (7) factors of content dimension drive variation from destination to delivery.



Figure 1. Omnichannel explosion

Continuing to publish in the traditional manner turns intelligent, creative humans into copy-and-paste robots moving content from one format to another, one variant to another, one language to another, one channel or system of record to another, and from one part of the workflow to another. As Figure 1 shows, the sheer scale of manual touch points in common content management is frightening. We can easily become slaves to manually inserted content. Why is there so much manual transformation and insertion? The simple fact is that, today, many enterprises still have neither standard schemas nor shared tags or terms. Content often resides in product-based or divisional silos with entirely unique content management and practices.

Unnecessary manual and unwieldy steps, like copy/paste, not only deplete creative resources, they insert "static" content that will not update automatically when source files are modified. Publishers and content stakeholders from different divisions copy/paste, often from multiple versions of the same static source files. Many managers still attempt to control semantic terms in spreadsheets, rather than creating centralized systems of record for sharing these critical tagging standards.

An insidious amount of "toxic" static content can gradually creep through an overall treasury of content assets like fast-growing ivy on an old brick building; the ivy will gradually dissolve the mortar to the point that the building's integrity becomes threatened. Fresh, updatable content assets keep an organization's communication integrity intact and ensure the ability to weather the storms of change.

The Enterprise Content Services Organization

Human beings within publishing teams should be creative, intellectual, value-added, and problem-solving participants, not automatons. Therefore, workflows should embrace automation and machine-support wherever possible, so humans can focus on creative productivity. Overdependence on manual labor touchpoints across the many vectors of content versions can lead to the robot “nightmare” scenario illustrated in Figure 2.

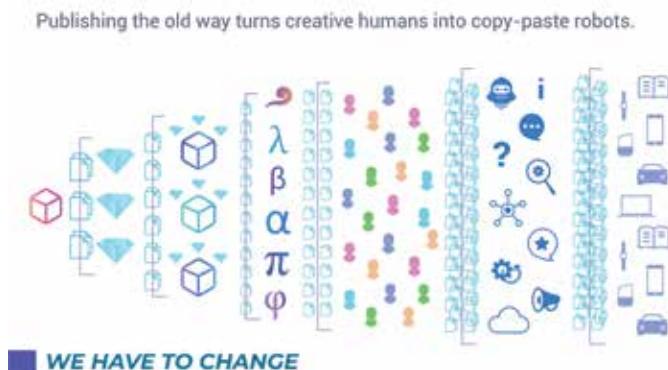


Figure 2. Consequences of the ongoing content explosion

The accelerated number of variants that can result from just five categories, for only one content type is shown in Figure 3. Naturally, this total number of variants could also be multiplied by the number of content types, to create an even more staggering total.



Figure 3. Exponential growth of variants

Symptoms of Content Organizational Dysfunction

Inside publishing-focused enterprise departments, which describes almost every major group making up a large geographically distributed organization, the organizational design around content has grown over time into a tangled mess of siloed content production efforts with little connection or facilitation.

Some of the symptoms of content organizational dysfunction include the following features:

- It is difficult or impossible to discover existing content.
- Content must be manually moved from place to place during a workflow.
- Every authoring group has a separate set of content structural schemas and none are related.
- Email or shared drives is the primary way content moves from person to person.
- There are lots of ad-hoc spreadsheets created to manage various taxonomies and none of them are connected.
- Content lives in multiple places, often repeated or duplicated, in many different versions.
- There is no agreement on standard vocabulary for terms or tags.
- Content is created for single “pages” or other representational states.
- Personalization efforts are stymied by a lack of modular content.

The more content producers, and the fewer standards employed, the more chaos and disorder reigns. It’s logical to draw the following hypothesis: If content producers are unsupported and unhappy within a dysfunctional system, content effectiveness and customer experiences will suffer. And without change, one day, the system will implode upon itself in the form of high turnover among staff and decreasing market relevance. If content fails to keep up with customers, customers fail to keep up with companies.

How to Survive the Content Tsunami?

We cannot avoid mass proliferation of content, but we can organize to manage it in a sustainable way. [A] proposes a new solution: Within the context of a new Content Operating Model (COM), form a chartered Content Services Organization (CSO) and empower it with durable leadership in the form of three major practices: Content Strategy, Content Engineering, and Content Operations.

Content Strategy must work with the Content Engineering and Content Operations practices. These are three major functional practices that must exist on a permanent, chartered basis to shape content at a sufficient speed and quality to become truly “intelligent.”

In 2011, Ann Rockley and Joe Gollner defined intelligent content as follows: “Intelligent content is structurally rich and semantically categorized and therefore automatically discoverable, reusable, reconfigurable, and adaptable” (Rockley & Gollner, 2011).

[A] further defines intelligent content as ([A], 2018b):

- **Coherent** - Orchestrated against a Master Content Model® unifying systems for content interoperability.
- **Self-Aware** - Connected with semantics, taxonomy, structure, and context.
- **Quantum** - Able to exist in multiple states and systems at one time, leveraging content assets for optimum reach and impact.

Creating a working coalition of content practices that reshape content can seem like a daunting goal, because it is. 80% of companies believe content supply chain challenges impede their ability to deliver on top business objectives (Forrester, 2018). The emergence of established Content Strategy functions and the widespread adoption of related roles across enterprises has helped to solve some of these challenges. Both Content Engineering and Content Operations are relatively new concepts to but have begun taking more shape.

Content is everywhere in an enterprise, because it is the basis for all customer experience. Content now originates from virtually every function within enterprises. To some degree, everyone is a member of the “customer experience team” as sales and marketing content, product documentation, support, and technical assets are reviewed and rated by potential customers throughout the whole customer lifecycle. Content shared between marketing, sales, technical communications, knowledge management, learning, localization, and others contribute to unifying pre- and post-sale customer experiences as customers choose where to start and where to go next within the content sets.

Given the complexity of enterprise content publishing, the practice of Content Strategy cannot solve today’s challenges alone. Content strategists need specialized counterparts and enablers to realize and sustain the goals of more strategic deployment of content assets, including the integration of engineering and operations functions.

In a dynamic landscape, content must move and be transformed to empower organizations and drive

customer value. Engineered content assets can be used in many places at once: they may be related, discovered, and used to deliver value across multiple systems and platforms, when and where needed, at the fastest possible throughput.

In this article, readers will find a practical model created by [A] in collaboration with enterprise practitioners as a future state prescription to adapt organization structures for the Intelligence Revolution, rather than a description of methods commonly in use today. Reinventing the organizational structure to support the next-generation of enterprise content and knowledge management will not be easy. We anticipate by making the changes outlined herein, we change the fundamental flows of information within an organization and influence all the creative acts surrounding crafting customer experiences.

And yet, as challenging as changing fundamental publishing process and supply chains is, enterprises expect content problems to only get dramatically worse without significant changes (Forrester, 2018), demonstrating that the costs of complacency are more perilous than steady progress towards a new Content Operating Model. The practices of Content Strategy, Content Engineering and Content Operations are defined below along with an approach on how they should work together within a Content Services Organization.

What Is Content Strategy?

One useful definition of Content Strategy comes from the article, “Rahel Bailie Provides a Content Strategy Primer”:

Content Strategy deals with the planning aspects of managing content throughout its lifecycle, and includes aligning content to business goals, analysis, and modeling. (Balilie, 2009)

[A] defines Content Strategy as an essential planning activity that identifies:

- What content an organization must acquire, manage, and leverage.
- What content experiences it must enable to meet its business goals.

Content Strategy organizes the vision for customer experience and establishes the business justification

The Enterprise Content Services Organization

for investments to be made in improving how content is handled, defining the metrics that will be used to measure progress against the plan.

What Is Content Engineering?

Content Engineering is the application of engineering discipline to the design, acquisition, management, delivery, and use of content and the content technologies deployed to support the full content lifecycle (Gollner, 2014).

In the spirit of engineering, Content Engineering leverages authoritative patterns, frameworks and standards to organize, substantiate, and economize its efforts.

Content engineers organize the shape, structure, and application of content ([A], 2018). Engineering content overcomes content supply chain friction, thereby increasing the velocity of content through authoring, management, and publishing parts of the lifecycle. Content engineers make possible content personalization, targeting, reuse, and distribution across many channels and devices. They bridge the divide between content strategists and producers and the developers and content managers who publish and distribute content. But rather than simply wedging themselves between these players, content engineers help define and facilitate the content structure during the entire Content Strategy, production, and distribution cycle from beginning to end.

Content engineers make sure that correct practices, platforms, and technologies are in place to take the Content Strategy from plan to technically realized reality as a resource to development teams. In short, content engineers hold the keys that unlock both the gates that separate very talented and often isolated members of a content marketing team as well as the full potential of what the team can accomplish.

Content Engineering is so important because it emerges at the intersection of strategy, operations, and implementation. It bridges strategy, technology, operational logistics, development, and omnichannel delivery.

What Is Content Operations?

[A] defines Content Operations as the organization function that performs the day-to-day business of acquiring, managing, and leveraging content. It is a management activity within the Content Services Organization that monitors, evaluates, and guides the content lifecycle, and the resulting content experience.

Content Operations takes the goals and requirements set by Content Strategy, and the content model and processes developed by Content Engineering and makes them real in terms of how the organization operates.

Content Operations executes against strategy and manages all content production workflows that take place when applying content structural and semantic standards, including the Master Content Model® ([A], 2018) and centralized semantic annotation, terminology, and tagging standards.

Content Operations collaborates directly with Content Strategy and Content Engineering, facilitating application of the Content Operating Model across authoring, localization, content management, and related teams. The Operations team directly empowers and facilitates distributed authoring processes in active production. It is the daily work of the Operations team that aligns systems and standards with active process, making possible the convergence and reuse of structured content types across various content domains.

Think of Content Operations as the glue or binding between the plan for content, the workflows and standards, the content management systems, and the daily management cycles that happen within publishing groups across the whole organization.

The goals of Content Operations:

- Oversee production content workflows and facilitate process best practices, standards, and optimization across various authoring groups in an enterprise ecosystem.
- Manage all the content transformation and enrichment workflows, those parts of the content lifecycle not directly related to the subject matter authoring itself.
- Increase developer and author efficiency by off-loading tasks that don't require direct developer or author attention.
- Facilitate the education and adoption of standards, systems, and the enterprise content lifecycle.
- Provide stakeholder advocacy within CMS/CCMS/CEM/CSP/DAM and other content and semantic technology implementations and ongoing management, in collaboration with IT.
- Collaborate with technical DevOps, especially where systems developed in-house drive customer experiences as much as the content does.
- Increase content flow and effectiveness via consulting and facilitating with internal content

committees, communities of practice, and governance or oversight groups, along with tight coordination with Content Strategy and Content Engineering stakeholders. See Figure 5.

How Do We Differentiate Content Strategy, Content Engineering, and Content Operations?

Content Strategy provides the who, what, when and why of content, while Content Engineering provides the how and Content Operations provides the where.

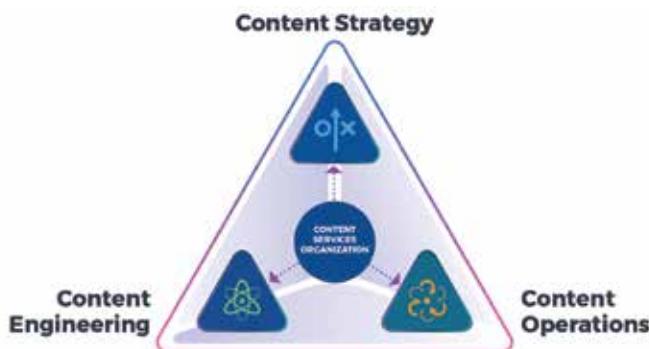


Figure 4. The three primary content practices in a Content Services Organization (CSO)

Each of these three practices has a guiding role that parallels stakeholders within corporate executive ranks:

Content Strategy is the CEO of Content.	This practice sets the vision.
Content Engineering is the CTO of Content.	This practice builds the delivery.
Content Operations is the COO of Content.	This practice empowers action.

Content Engineering Is Key to the Content Orchestration Triumvirate

A new bridge between stakeholders and developers must exist during planning and execution. Enter Content Engineering. The content engineer helps orchestrate the complex tools (musical instruments) and content (sheet music) to achieve a harmonious result (music played in key).

Content and data assets need to be empowered to move seamlessly across organizational silos, Web services, search tools, CRM, CRP, and CEM

platforms. Content must be like electricity, moving and transforming to power organizations.

The practice of Content Engineering gives organizations increased strategic alignment and impact across publishing, and improves the overall effectiveness of the spend on assets that can be multipurposed across usage scenarios. Engineered content assets can be used in many places at once, related, discovered, and used to deliver value at the fastest possible throughput. But, for many organizations today, content is more like a rock: chiseled and placed in some wall like a brick, never to be moved.

Together, content strategists and engineers should be tireless advocates for the transformation of documents into reusable, structured content components connected by common semantics. In other words, these practices work in concert towards intelligence across all content domains.

The Orchestration Layer

Organizations need a new Content Operating Model (COM). The practices we have discussed need to be included in a full, holistic picture that includes a Master Content Model® and a master semantic model ([A], 2018a). The standardized structural model is an orchestration layer for content schemas. The semantic model is an orchestration layer for taxonomies and vocabularies. The Content Services Organization is an orchestration layer for the applications of standards and workflow among diverse, far-flung authoring groups.

These standards, in concert with other orchestration artifacts and process, are maintained by the tripartite functions of Strategy, Engineering, and Operations along with a an overall content leadership function.

Together, these form what [A] calls the Content Services Organization (CSO), ideally positioned as a centralized orchestration function across the entirety of the integrated enterprise. The CSO itself, defined and chartered formally within the Content Operating Model (COM), and charged with enacting the COM, forms a multidisciplinary epicenter for standards orchestration. The CSO is the primary internal organization responsible for implementation, and maintaining the ongoing rhythms, of the Content Operating Model and the core principles of content intelligence.

A chartered orchestration function provides a centralized environment for enacting global patterns

The Enterprise Content Services Organization

across content and metadata sets that impact broad business value, including, but not limited to:

- Accessibility
- Localization
- Industry Standards
- Search Engine Optimization (SEO)
- Privacy
- Security
- Analytics
- Compliance

Each of these functions benefits from integration into content models, semantic models, and standards for customer experience. Each needs to both provide and inherit shared patterns, and each needs orchestration to drive efficiency and effectiveness. Valuing content as a broker of customer experiences requires cross-functional management, and operational models that puts controls in place for the movement, efficiency, effectiveness, and measurement of valuable content assets.

The primary content services leader, a Head of Content, that leads the CSO, can report to a CMO, a head of Customer Experience, COO, or even to the CEO. The key is that the cross-functional content organization must have efficient executive sponsorship and be empowered and funded to live up to its broad mandate to unify the Content Operating Model, and therefore the customer experience, across the enterprise holistically. Senior mandate and fiat figures in as a key success factor to a CSO successfully carrying out its mission. A CSO can exist in a subsidiary group, or within a business function if an enterprise-wide mandate cannot be accomplished. However, functionally-isolated CSOs will only succeed to the extent of their mandate and empowerment as an orchestration function.

There is clear business justification for investing in a COM and CSO as an internal content standards orchestration regime. Tangible profits and customer wallet share benefits can be derived from omnichannel delivery, dynamic personalization of content, and facilitating scalable operations (van Dijk, 2017). Greater customer traction can be derived from moving content to a consumption-based model that enables content fragments to be compiled. More automated assembly of content appropriate to different locales improves localization for international markets.

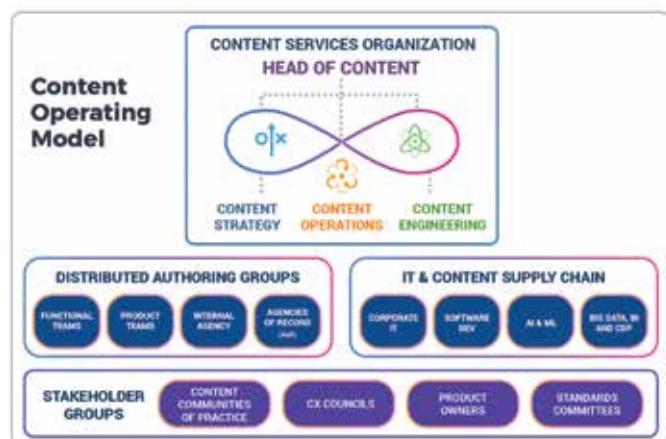


Figure 5. The Content Intelligence Operating Model Overview

A Convergence Between Marketing and Technical Communications

Although progress has been made in terms of working together with shared, structured content, Techcomm and Marcomm need to work together to achieve a more unified, productive approach to omnichannel customer experience challenges. Historically, Marcomm has been primarily interested in presentation, while Techcomm has been more focused on in-depth content and structure. Both disciplines have had very different cultures in pre- and post-sales communities. Organizations may begin Customer Experience (CX) alignment around shared content structure and semantic standards as a way to stitch together content systems and processes.

How Context Should Influence Content

Context is critical for content-based Customer Experience (CX). With awareness of context, content can conform itself for fluid delivery to meet customers within their unique contextual frames.

Customer Experience Management (CEM) technologies, the growing big data lake or Customer Data Platform (CDP), Account-Based Marketing (ABM), and other contributors toward personalization have been transforming omnichannel marketing for a decade - but content has not caught up yet. We now know that the future of content experiences hinges on intelligent, contextual and predictive approaches to delivering personally-engaging and relevant content. We also know we have more data than ever available to us to craft these experiences.

The Content Services Organization (CSO) must exist to build and prepare content forms for use within all of these customer experience systems, so the content itself can keep up with the contextual user data to actually become available for the realtime assembly of experiences. Without content structured and available to machine processes, personalization efforts fail outright.

We need an enterprise “content pool” to match our enterprise “data pool” (Porter, 2012).

Current Models: How Old Bridges Can Collapse

As discussed, many content creators in Techcomm, Marcomm, or other teams within the enterprise are working with systems and solutions that may have been formed or started well over a decade ago. The compelling need to exchange content and data between Techcomm and Marcomm for relevance is a relatively recent development.

Many technical content creators are working with a content management system (CMS) or component content management system (CCMS) based on DITA designed primarily for technical documentation. The Darwin Information Typing Architecture or Document Information Typing Architecture (DITA) is an open XML standard data model for authoring and publishing. Since DITA components can be rearranged and easily reused, it is very beneficial in Techcomm. In contrast, most marketing content creators are working with some sort of customer experience manager (CEM) to make output more up-to-date and relevant. Usually, DITA does not interact cleanly with marketing-oriented CMS and CEM platforms, nor do the publishing models natively align. The COM and CSO solves this gap by assigning accountability for portability and interoperability to a business-driven group outside IT, tied closely with the strategic needs of the business. The CSO uses content in a Master Content Model® to reconcile DITA with other metadata and markup standards such as schema.org, Open Graph Protocol, and industry-specific XML standards.

Unfortunately, during the planning stage of many existing systems, there was no Content Engineering staff to help ensure that communications between the strategy, design, and content stakeholders and the developers would work together in the CMS configuration(s). As a result, specifications from content

strategists often did not include the “how” piece: how to structure content, how taxonomies work together, and how to tie all of the components together with contextual customer data.

Intelligent Content Requires Redefined Teamwork

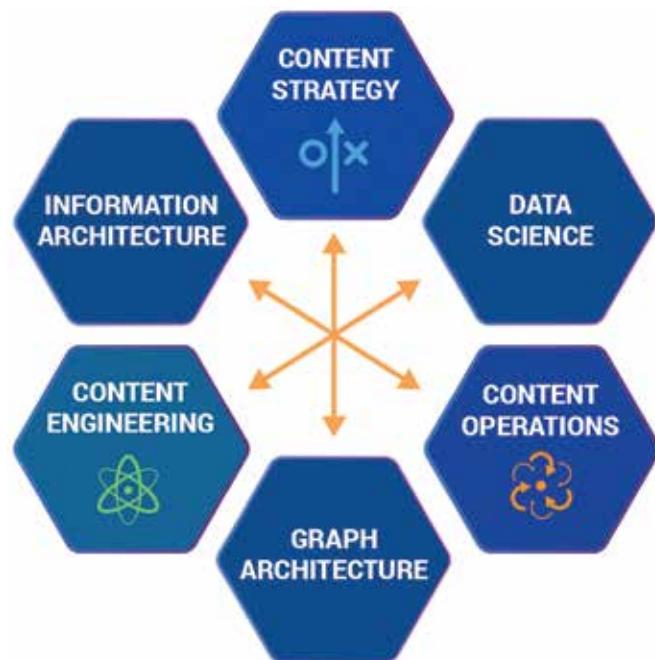


Figure 6. Emerging content organizations require deep teamwork for content intelligence

The unification of Content Strategy, Content Engineering, and Content Operations helps bridge a critical gap in communications that exists in most organizations. This new vision of teamwork ensures the “how” factor is communicated from Content Strategy to developers. But, of course, there are other practices needed for large-scale publishers. Highlighting some of these are:

- Knowledge Graph Architecture and Ontology Management
- Information Architecture and User Experience Design
- Data Science and Analytics

Teamwork across many kinds of disciplines also underscores the need for consistent architectural patterns including a Master Content Model® ([A],

The Enterprise Content Services Organization

2018) and semantic model to ensure a broad-based organization working across skill areas can orchestrate omnichannel content experiences from authoring through delivery today, while preparing for ever-more sophisticated content knowledge graphs that will become the basis for dynamically-assembled customer experiences in the future.

How hard is it to add Content Engineering into a team structure?

Adding Content Engineering into the content lifecycle is not an onerous process. Even at the team level, content owners can add Content Engineering disciplines into the lifecycle without major changes in the staff and organization, by assigning a single contributor at first, or training and upleveling a content structural specialist.

New Organizational Models Can Improve Communications

With the vast portion of our workflow landscape changing beneath our feet, new lines of communications between teams are essential. As content practitioners, we have been dealing with content structure for years. Content as a Service (CaaS) focuses on managing structured content into feeds that other applications and properties can consume. Now, as we move toward CaaS within publishing organizations, the need to normalize content and move content services across a global enterprise requires structural thinking at all stages of the content lifecycle. The time has come for us to imagine and create new organization structure to enable the increasing flow of content between groups.

Inevitably, some organizational restructuring will have to take place for all of the goals we have outlined to become successful. Nearly every touchpoint of customer experience and customer communications has changed dramatically since the advent of portable, smart devices.

The Semantic Foundry has recently posted a thoughtful analysis on system models for organizational design (*Exploring System Models for Organizational Design*, 2018). Ten system models are highlighted, each with pros and cons. There are many advantages to choosing a model as a starting point based on the context and strategy of an organization.

The author (“Semantic Foundry,” 2018) postulates that these models can spur productive conversations when organization thought around redesign includes systems, capabilities, process, people and culture. Taking the initial focus away from an existing org chart and focusing on capabilities and outcomes can lead to effective cross team collaboration.

[A] finds the Holonic Enterprise Model a useful starting point, wherein the core practices are represented within each authoring group. (See Figure 7.)

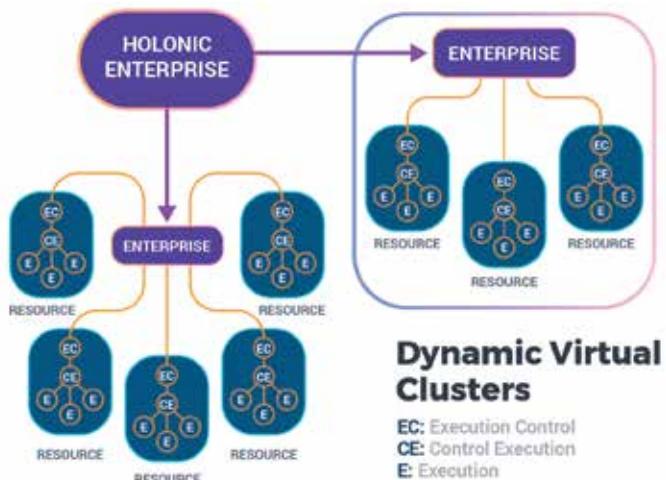


Figure 7. The Holonic Enterprise Model

In this article, Semantic Foundry writes that the strengths of the Holonic Enterprise model are “flexible organization architecture combining best features of top-down enterprises and bottom-up subsystems loosely coupled through networks and alliances, allowing greater adaptability to a changing environment” (2018).

On the “down side,” this model needs a strong mission or purpose to keep various subsystems aligned with the enterprise. There is a potential for high coordination and orchestration costs associated with alignment. Decision-rights and authority must be specifically spelled out.

We like the representation of various roles within teams, all connected functionally and by specialized area. A holonic model, for example, might have dedicated product or regional content authoring teams living alongside a strategic practitioner (content strategist), structural and semantic practitioner (content engineer), and a content operations practitioner, who in turn coordinate with the leaders and standards-oversight groups within the Content Services Organization (CSO).

Managing Content in a Fractal Enterprise

Throughout our organizations, content expresses itself in many forms, all of them related. Topic-based content (for example, content describing facets of a particular product) has permutations and modified renditions as versions crop up across marketing, support, and other departments. Enterprise content therefore might be seen as ‘fractal’, faceted endlessly by various usages, a concept [A] Master Architect Joe Gollner has been advocating and educating on for almost 20 years, exploring how integrated content management and intelligent content are also connected to a fractal enterprise (Gollner, 1999, 2016a, 2016b). If we are to ever create coherence, common standards become essential to ensure connections, consistency, and integrated asset use and discovery.

The goal of a Content Services Organization should be to orchestrate consistency across fractal uses of content. This requires a healthy degree of balance, exerting influence on authoring and the entire content supply chain, without requiring every single fractal of content to pass through a centralized governance regime (an impossible task when permutations become infinite).

In any workflow model, there must be an appropriate balance between facilitating content from “the edge” (content creators who are nearest the customer) and content and editorial cycles from the “center” (content producers in centralized shared resource groups). An extreme or overly-constrained governance of content from a central authority can constrict content creation and lead to resentment and resistance from all content stakeholders, ultimately threatening the governance regime. Therein, lies the story of many gutted and abandoned governance efforts.

A balanced solution has reasonable authority to maintain and facilitate content structure and semantics standards utilized by shared content authoring tools, systems of record, and templates -- to move content throughout multiple publishing lifecycles with a minimum of friction. The Content Services Organization ensures all the various content-producing groups remain in harmony with agreed-upon foundational standards, established at the “center” of Content Strategy, while listening to and adapting the structural and semantic standards regularly based on the needs from “the edge.”

Established standards should be based on an overarching architectural framework that helps to unify people, process, and tools. At [A], we call this the Content Intelligence Framework ([A], 2019). Regardless of the architecture approach chosen or defined internally, Content Services Organizations need a documented framework to steer and manage by, otherwise risking creating more confusion than coherence.

The Content Services Organization then evolves beyond just being the repository of enterprise-wide standards but also enables cross-functional collaboration, facilitates shared schemas and taxonomies, and works with IT and vendors to make sure system schemas encompass standards, strategy, software, and integrated systems. All of these functions housed within the framework work in unison under the oversight of the Content Services Organization and inform the entire organization’s operating rhythms. With the CSO facilitating, content producers, marketers, and product groups have plenty of room for variation and nimble improvisation as needed to assemble new content experiences from the agreed-upon ingredients, and business function owners can be assured that all content assets are able to conform to set criteria, laying a foundation for sustainable content intelligence.

This “fractal approach” to the organizational Content Operating Model also provides the benefit of allowing vast, distributed teams to be meaningfully engaged and recognized for their vital role crafting customer experiences. Authoring groups become empowered and supported by the Content Services Organization, not stifled by a centralized governance function that gets in the way of publishing.

A New Framework for Collaboration Across Multiple Roles

In order to deliver the right content to the right user at the right time, we must eventually develop an organizational structure which embraces the continuum between strategy and engineering practices and its related sub-disciplines. Figure 8 represents an organizational commitment toward content intelligence that actively involves participation from all content-producing groups within the enterprise.

The Enterprise Content Services Organization

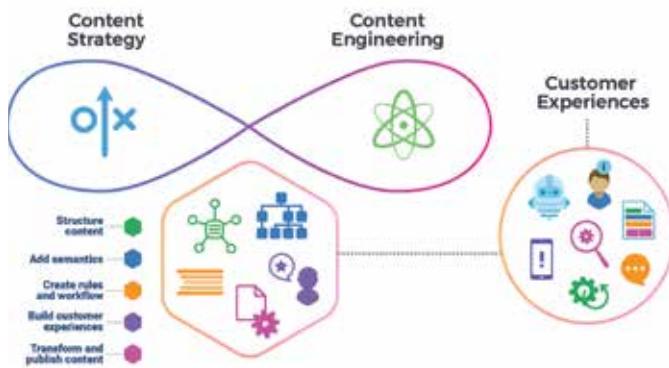


Figure 8. Customer experience collaboration across content strategy and engineering

The Interactions Between Content Strategy, Content Engineering, Content Operations, And Content Leadership

The diagram in Figure 9 has been adapted and extended from “New Thinking: Brain Traffic’s Content Strategy Quad” by Kristina Halvorson, proposed in new form here by [A].

Each practice overlaps others, necessitating close collaborative work across primary and secondary responsibilities. It is this overlap which enables each area to successfully contribute to shared business outcomes and influence the entire enterprise coherently. Keep in mind that as a team, the Content Services Organization will function best when all functions have inputs from others. For example, **Analytics** requires inputs from Strategy and Engineering, even if **management** of analytics regimes and daily administration is overseen by Leadership. And Strategy will provide key inputs to Quality standards, even though Operations maintains Quality services overall.

Within the Content Services Organization Capabilities Model, here is a review of core roles:

Content Strategy orchestrates the customer **experience** and **editorial** approach. It also works on overall **process** and the guiding **structural** standards, in collaboration with engineering. Content Strategy designs and curates the targeted content interactions. What content is resonating with our customers? What is our segmentation strategy? Which content maps to which part of the customer journey and market conversations? What do we need to publish to meet market needs?

Content Engineering encompasses **process** and **structure** governed jointly with Content

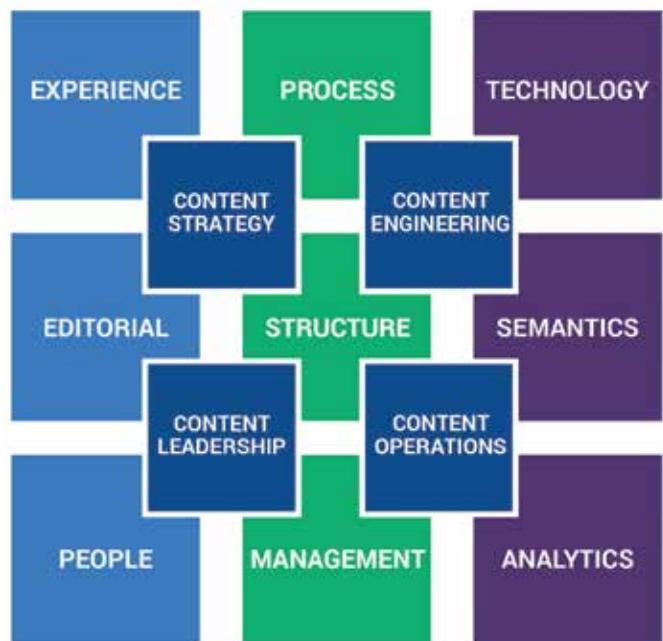


Figure 9. The Content Services Organization Capabilities Model: A continuum across Content Strategy, Content Engineering, Content Operations, and Content Leadership

Strategy to enable the original plan for publication. Engineering ensures the ‘how’ of content delivery is possible with integrated, consistent schemas across content **technology** systems (planning, authoring, management, publishing) and as low friction as possible through all stages of the content lifecycle. Working on the systems and standards needed to frictionlessly author structured omnipurpose content, tagged and annotated with controlled **semantics**, and available through the content supply chain to delivery endpoints that produce customer experiences across channels.

Content Operations is a **management** activity that deploys, operates, monitors, and evaluates the content lifecycle and supporting content ecosystem as they are used to realize and optimize the content experience. Content Operations administers **analytics** programs and reporting, quality assurance, and alignment between the content set’s **semantics** and **structure** standards and the actual content in production. Being the stakeholder who pulls so much together, Content Operations is uniquely positioned to oversee the quality and analytics across the entire content lifecycle, and ensure all workflow processes (including localization, accessibility, SEO, legal) perform their functions smoothly in concert with the content production teams.

Content Leadership oversees the business value drivers, the **people** strategy and organization within the CSO, the return on investment strategy and measures, and manages the standards and process around supporting **analytics** and data analysis functions. Leadership facilitates the relationships of the CSO with the overall enterprise executive environment, ensuring funding, authority, and resource availability for the CSO. Content Leadership also helps aligns business objectives with **editorial** strategy, ensures the business strategy is represented in **structural** standards, and works with Content Operations on consistent **management** of the overall content intelligence program.

Each of these roles depicted in Figure 9 should own the orchestration of the functions, but not necessarily be the exclusive partners involved. For example, the CSO team should work with people outside of the CSO, such as SEO specialists from marketing, to inform the effectiveness of initiatives. Members of the CSO participate broadly to connect and enable multiple groups within an organization. The CSO is an orchestration organization, and the center of gravity for content across the enterprise.

Conclusion

We have analyzed the challenges confronting existing content teams, and have proposed a future-state framework involving a Content Services Organization (CSO) that orchestrates standards and principles by which the various aspects of the content supply chain can be adapted into coherent interoperable forms, for cross-disciplinary collaboration involving Content Strategy, Content Engineering, and Content Operations practices.

Enterprise content teams must come together under a unified organization design and Content Operating Model (COM) with clear, shared goals to achieve an effective return on assets as part of an overall Content Strategy. In order to deliver the right content to the right user at the right time, we must develop an organizational structure that represents an organizational commitment toward content intelligence that involves participation from multiple content-producing groups within the enterprise.

The promises of true artificial intelligence (AI), chatbots and other conversational interfaces, augmented and virtual reality (AR and VR) environments,

personalization, and so much more within our evolving content-driven world, simply require orchestration to bring to life. Although the challenges seem daunting as we seek new structures to birth these next-generation customer experiences, many organizations already have motivated teams ready to make changes in the face of the revolution, knowing that it is only through the fire of transformation that a new, more stable order can emerge.

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Content Strategy as Practical Knowledge

By Heinz Wittenbrink and Jutta Pauschenwein

Abstract

Purpose: In 2014, a master's program in Content Strategy for professionals began at the Joanneum University of Applied Sciences in Graz. This is the first and, so far, the only master's program of this kind.

Method: In this article, we present the master's program as a case study. We are dealing with the understanding of the concept of content conveyed in the degree program and with the didactic (pedagogical) approach. We analyze how our initial approach has proven its worth in practice and how we modified it. We interpret selected results of our experiences (e.g., the way to supervise the master theses).

Results: We discuss these experiences based on the concepts of "reflective practitioner" (as introduced by Donald Schön) and "community of practice" (as introduced by Étienne Wenger). We investigate the relationships between implicit and explicit practical knowledge and the possibilities of teaching this knowledge to other practitioners.

Conclusion: Content strategy can be taught and conceived as a reflective practice which is integrated into communities of practice.

Keywords: Content Strategy, Reflective Practitioner, Communities of Practice

Practitioner's Takeaway

Practitioners can learn three aspects by reading this paper:

- In professional practice and education, Schön proposes to learn in doing. Practitioners who are aware of a problem should define it (knowing-in-action), reflect and decide how to act in this unique situation (knowledge-in-action) and evaluate the outcome immediately (reflection-in-action).
- Salmon's model of online groups gives a framework for the development of a group and a scheme with which tasks to lead the group and support further development.
- Wenger can help in building a community of practice with the characteristics domain (the common topic, field of work), community (social room, respect, trust) and practice (having experience in the field, explicit and tacit knowledge).

Content Strategy as Practical Knowledge

Introduction

In the 1980s, Donald Schön developed a theory of what he called “professions” (Schön, 1983). The “reflective practitioners” working in these professions are characterized by the fact that they are operating in situations of uncertainty and that, in the course of their work, they carry out complex research tasks in order to clarify the situation in which they are acting and thereby precisely determine their tasks in this situation. These cognitive activities of reflective practitioners are rational and can be described, as Schön explains in his books, but they do not follow the positivistic understanding of the application previously assured by scientific knowledge in practical situations. For Schön, the work of architects, psychoanalysts and psychotherapists, city planners and managers can be described with this model of the reflective practitioner. He states that teachers, social workers, nurses, and scientists themselves are acting also as reflective practitioners. Schön assumes that in a society more and more depending on knowledge, professionals will assume an increasingly important role and that new professions will continually emerge. He refutes the demand to end the domination of the experts by democratizing professional knowledge and replacing by the knowledge of the people involved by the practice of architects, therapists, etc. as illusory. However, he requires the professionals to not understand themselves as the bearers of an arcane knowledge which legitimizes domination, but as rationally acting experts who can question situations and make their research and reflection transparent and comprehensible for those affected by it.

When we developed the curriculum of the Content Strategy program¹, Donald Schön’s (1983) approach was only superficially known to us. However, we were able to refer explicitly to Wenger’s theory of communities of practice, in which many of Schön’s concepts have been incorporated and which is also related to him.

¹ The M.A. program in content strategy at the University of Applied Sciences in Graz is the first academic program completely devoted to Content Strategy. The students’ workload is equivalent to a full-time master’s program, but the students are professionals studying and working. The goal of the curriculum is to teach content strategy as a discipline as described in the foundational books by Ann Rockley, Kristina Halvorson/Melissa Rach, Rachel Anne Bailie/Noz Urbina, and others.

In the Austrian university system, the orientation toward what Schön calls “Positivist epistemology of practice” (1983, Chapter: The Origins of Technical Rationality) is prevailing. Our university (www.fh-joanneum.at) is a University of Applied Sciences (UAS). Curricula are usually developed in such a way that the imparting of scientific knowledge is combined with practice-oriented courses.

In this essay, we want to discuss two aspects:

1) The concept of the “reflective practitioner” allows us to describe what we are practicing in our program. We are imparting content strategy knowledge as a component of reflective practice related to new job profiles or professional tasks. In a future version of our curriculum, we will use the model of the “reflective practitioner” explicitly instead of using it implicitly in order to make our teaching content more transparent to students and to ourselves.

2) Our own didactical approach is following Schön’s (1983) model as well. In the past years, we have developed the course as reflective practitioners of teaching adults and have come up with a practical teaching framework that previously did not exist at our university in this form. Here, too, using the model of the “reflective practitioner” as an explicit reference point is a chance to improve the teaching quality and to avoid burdening our work with understandings of the role and task of teachers that do not comply with its specific requirements

For us, the discussion of Schön’s (1983) concepts serves, above all, to better understand our own activities and to establish and justify their differences from the positivist model and deviation from the usual self-conception of the University of Applied Sciences. We cannot generalize the results we describe in this paper beyond our own field of experience. However, we would like to formulate the hypothesis that the reflective practitioner model is suitable for describing the activities of content strategists and, above all, the research activities characteristic of the practice of content strategy. We also believe that teaching content strategy, and the practice of content strategy, cannot be separated, precisely because it is a reflective practice. Content strategy can only be taught by practicing it. However, it

can obviously only be practiced if it is taught at the same time (i.e., communicated to stakeholders, colleagues, and customers). The reflective knowledge needed for the practice of content strategy is also needed for teaching content strategy as a practical discipline.

To meet the challenges of their work, content strategists rely less on theory than on skills in analyzing and reframing situations learned in practice. To outsiders, this may sometimes seem as improvisation. In their practice, content strategists, as all professionals, are confronted with situations of complexity, uncertainty, instability, uniqueness, and value conflicts. Professionals are confronted with “messes”—dynamically changing, complex and connected problems and competing theories. Especially in a new discipline such as content strategy, these effects determine everyday work. Nevertheless, practitioners of all fields somehow succeed to make sense of complexity and to reduce uncertainty in their day-to-day practice.

The Model of the Reflective Practitioner

In his book *The Reflective Practitioner*, Schön (1983) states that the handling of complex, uncertain, unstable situations which may be loaded with conflicts of value cannot be sufficiently understood as pure application of a previously (e.g., at a university) taught knowledge. Professionals are not technicians who use the appropriate means to reach pre-existing ends but have to set goals in situations which are defined only in connection to these goal-setting activities. Schön criticizes the assumption of a hierarchy between researchers who develop models and tools for the practice and practitioners who should apply them in untidy, real-world contexts. Because professional practice includes repetition, practitioners will develop a repertoire of expectations, images, and techniques which helps them to understand situations. But these models, concepts, and frames can never be transferred to new situation without being reworked.

In the course of professional activity, the knowing-in-action becomes increasingly tacit, spontaneous, and automatic. Through reflection, a practitioner scrutinizes his tacit understandings and can make new sense of new situations.

In professional education, Schön (1983) proposes to reflect in action, to learn in doing. In his scheme, there are three levels: to be aware of a problem and define

it (knowing-in-action); to reflect the problem and to decide how to act in this unique situation (knowledge-in-action); and to evaluate the outcome (reflection-in-action). When someone reflects-in-action, he/she “becomes a researcher in the practice context” (Schön, 1983, p. 68); “Nevertheless, because professionalism is still mainly identified with technical expertise, reflection-in-action is not generally accepted as a legitimate form of professional knowledge” (Schön, 1983, p. 69). “Uncertainty is a thread” (Schön, 1983, p. 69).

In a “reflective conversation with the situation” (Schön, 1983, p. 268), professionals think about what they are doing. They start with a problem of making/understanding something, they are open to discover phenomena incongruent with the initial problem, they reframe the problem in an experimental way, they draw on elements of their familiar repertoire, and then they formulate new hypotheses.

There are some constants which characterize the work within a profession: the repertoire, which includes media and language to describe the profession; the appreciative system (Varey, 1998) with respect to problem setting; the evaluation of inquiry and reflection; and the underlying theories needed to make sense of phenomena and the role frames—based on their institutional settings—seen as filter that influences how practitioners define their professional responsibilities.

The Content Strategy Master Program in Graz

The study program started in 2014 and is the only master's program in this discipline world-wide. The cohorts comprise between 20 to 25 students, about 23 to 45 years old. Their former education comprises journalism, marketing, public relations, communication, design, literature, political science, international relations, and languages. They have graduated at universities with a scientific focus or at universities with a focus on practice comparable to the polytechs in the USA. They are working in marketing, public relations, journalism, and corporate communication, as editors and Search Engine Optimisation (SEO) specialists, and as technical writers, information architects, or social media managers. In the first four years after the start of the program, there was only a small number of dropouts in spite of the heavy workload the students encounter in their roles as students, professionals, and family members.

Content Strategy as Practical Knowledge

The first curriculum is based on the content strategy process as it was understood by the development team of the program in 2013/2014. This curriculum will be updated in 2019. The teachers in the program are mostly internationally known content strategists or content practitioners from German-speaking countries. A small core team at the university (including the program director, three lecturers who are also teaching in other programs, a manager, and an assistant) are coordinating the students and a distributed network of teachers. The students spend roughly two weeks and two weekends per semester at the university in Graz, Austria. About 60% of teaching and learning happens online. Nevertheless, a classical learning management system is only used for the delivery of papers. In agreement with the spirit of freedom and openness, communication and online learning are handled via tools used at companies (e.g., the messaging service Slack and the project management software Trello).

The program has been developed in response to a practical need: In Austria, there is no academically advanced training for content practitioners in responsible positions. We understood the discipline of content strategy as a means of teaching the knowledge that these practitioners need. In a first phase, we assumed that this knowledge follows a coherent doctrine and that it corresponds to a consistent role, namely that of the content strategist.²

Schön's (1983) approach allows for making the relationships between content strategy and science more explicit than we did it when developing the program. The application for the accreditation of the program states that content strategists need competences in information science. All other parts of the body of knowledge which are described in this application are not yet scientific disciplines. Therefore, as authors of the application for the accreditation of the program, we have avoided making explicit the type of knowledge which is required for practicing content strategy successfully. Instead, we used enumerations or metaphors like "practical field."

² In the application for the accreditation of the program, we refer to a "structured body of knowledge" ("einem strukturierter Wissenskorpus"). (Fachhochschule Joanneum 2014, p.9). We call the program "a social and communication science course of studies with a strong technical and design component" ("sozial- und kommunikationswissenschaftlicher Studiengang mit starker technischer und Design-Komponente"). (Fachhochschule Joanneum, 2014, p.12)

The application for the accreditation of the program assumed that content strategists ideally follow a cyclical model of their practice. This model includes one phase of analysis, one phase of design, and one phase of implementation alternate, assuming that the implementation is always followed by a new analysis phase. We have linked this cyclic model to the frequently cited model of a content lifecycle.

After an introductory phase (semester 1), the sequence of courses in our curriculum is following this cyclical model. In the first semester, the students get an overview of the discipline and are taught about common prerequisites. The second semester is dedicated to different kinds of analysis. The focus of the third semester lies on defining a strategy. The fourth semester is dedicated to the implementation of the strategy.

In the courses, students should comply as much as possible with the needs of professional practice. Most of the teachers are practitioners from agencies and companies. The final part of each semester consists of a larger individual project, in which the students can preferably deal with topics from their everyday work and which ideally can also be carried out during their working hours in the job.

The final master's thesis is also practical in nature. It should ideally comprise all phases of a content strategy. We have conceived the master's thesis as the documentation of a practical content strategy project. With the help of Rahel Anne Bailie, we have developed a template that students should follow in writing their thesis. The template should ensure, on the one hand, that the focus of the thesis is on a practical project and, on the other hand, that the projects and the theses of the students can be compared to each other.

The content of our program doesn't depend on understanding content strategy as a quasi-scientific discipline or sub-discipline. Up to now, content strategy has never been seriously defined as a part of information science or any other scientific discipline. However, it is oriented toward the ideal of a person who may be called a content strategist and is mastering the whole range of activities, which are usually components of a content strategy. The professional practice of the content strategist is essentially understood as the application of this knowledge. This corresponds to the fact that project work is almost exclusively undertaken by students on their own and that the master's thesis is a quasi-scientific paper documenting such a project carried out alone.

The practical orientation of this approach has proven its worth during the last years. We did not conduct systematic studies on the success and satisfaction of the students. But the low number of dropouts, the increasing number of applicants—two to four times as many applicants as available places—who often learn about the course from former students, and many corresponding mentions of the course in social media speak for the success of this approach.

However, the orientation to the idea of content strategy has proven to be problematic if a previously imparted knowledge is applied. Here, an examination of Schön's (1983) criticism of the idea of applied science can help to advance a new approach.

Approach and Experience

Content Strategy Master Theses Showing the Limits of Our Approach

A characteristic ambivalence can be seen in the master thesis projects, which, on the one hand, produce academic papers and, on the other hand, produce deliverables of practical content strategy projects.

The problem of the idea of a content strategist as a problem solver with special expertise, who can act essentially alone, is most clearly demonstrated in the master's thesis projects. In almost all of these projects, it was not possible to implement or document a complete content strategy project.

In her master's thesis, Stefanie Püschel (2016) develops her own content strategy model, which corresponds to the business model of the company for which she created her work (Püschel, 2016).³

Paolo Reinighaus (2016) limits his work to the analysis of the existing website of the Human Technology Cluster Styria (Reinighaus, 2016). As a result of the work, he emphasized that the next steps would have to be taken with the involvement of all stakeholders (Reinighaus, 2016, p. 55). He also emphasizes that the analysis of the special conditions of an organization (i.e., of an individual case that cannot be subsumed under already known rules) is decisive for

³ Master's theses can be downloaded from <http://epub.fh-joanneum.at/nav/classification/1959332>. Unfortunately, many master theses produced on behalf of the employers of the students can only be published 5 years after having been submitted. The students are free to publish their master's theses in this repository or to submit a printed version. The majority of the theses produced until now (Spring 2019) can not be freely downloaded.

success. He also points out how insisting on uncertainty in individual cases is repeatedly emphasized in the content strategy literature (Reinighaus, 2016, p. 54).

Irene Michl (2017) insists on the interdependencies of the different components of a content strategy and on its iterative character. Also, in this case, content strategy and a very specific business situation are closely related: "Working on this project has shown that the strategy process is not linear. After obtaining the research results, adjustments were made in content briefing and goals. Through the interaction with the client during the strategy process, the consultant learned more about the company, which also affected the strategy" (Michl, 2017, p. 86).

In the conclusion of her work (Köck, 2017), Judith Köck emphasizes, above all, the complexity of the content strategy and implicitly the difference between the core competence of the content strategy and the many and changing fields of knowledge they have to do with.

You can't do everything and you can't know everything. This well-meaning hint from content strategist Kate Kenyon has proven to be only too true for this work. The field of activity within the content strategy is broad and the individual disciplines involved seem to be innumerable. . . As the present work shows, a content strategy requires knowledge from areas such as UX, branding, search engine optimization, design thinking, information architecture or communication. Since it has to be established at the highest level, management knowledge also makes sense and psychological understanding is also an advantage. The content strategist is a generalist. The most important thing is to keep the overview, to know what is possible and to bring everything under one roof."⁴ (Köck, 2017, p. 79)

Here, too, the indefinite, open character of the initial situation of content strategy is emphasized as well as the necessity to define or limit the tasks in the course of the work itself. Judith Köck (2017)

⁴ Translated from the original German version: "Man kann nicht alles können und auch nicht alles wissen. Dieser wohlmeinende Hinweis der Content Strategin Kate Kenyon hat sich auch für diese Arbeit als nur zu wahr erwiesen. Das Betätigungsfeld innerhalb der Content-Strategie ist groß und die beteiligten Einzeldisziplinen scheinen unzählig.... Wie die vorliegende Arbeit zeigt, erfordert eine Content-Strategie unter anderem Wissen aus Bereichen wie UX, Branding, Suchmaschinenoptimierung, Design Thinking, Information Architecture oder Kommunikation. Nachdem sie auf höchster Ebene zu etablieren ist, macht auch Management-Wissen Sinn und auch psychologisches Verständnis ist von Vorteil. Der Content-Strategie ist ein Generalist. Das wichtigste ist, den Überblick zu bewahren, zu wissen was möglich ist und alles unter einen Hut zu bringen" (Köck, 2017, p. 79).

Content Strategy as Practical Knowledge

concludes that content strategy is usually too complex for small companies. But one could also say that in such companies the tasks have to be defined differently.

It has repeatedly proved necessary to interlink the practice of the content strategist so closely with the other activities within an organization that one can no longer speak of content strategy as the application of knowledge. Rather, in these works, the content strategy with the expertise acquired during the studies proves to be, above all, an analyst and a facilitator who work together with others in an organization on the strategic development of content.

At the same time, however, we have taught content strategy as a knowledge of reflecting practitioner, on the one hand, through the reference to the community of practice of content strategists and, on the other, through our didactic/e-didactic approach. We conceptualized our own practice only at a later stage using Schön's model.

The Pedagogical Practices and Experiences

At the beginning, the didactical concept was derived from the works of Gilly Salmon, Etienne Wenger, George Siemens, Stephen Downes, Roy Williams, and Jenny Mackness.

We learned from Gilly Salmon how to support online groups. Online-tasks—so-called e-tivities—based on Gilly Salmon's 5-stage model for the development of online groups support the learners to build up expertise in online learning (Salmon, 2013, 2011). Teachers in the role as moderator or convener facilitate this structured developmental process. The COS students start their study program online in an online space built only for this group. In a four-week intense phase of online socialization, the students are challenged to get to know each other, to build trust, to share personal experiences, to get to know the competences of their respective COS cohort, and to create an online learning group which will be the basis of learning processes during the whole study program. The students are explicitly stimulated to reflect the group learning process.

We learned from Etienne Wenger how to build communities of practice (Wenger, 1998). The structural characteristics of a community of practice as understood by Wenger are **domain** (the common topic, field of work), **community** (social room, respect, trust), and **practice** (having experience in the field, explicit and tacit knowledge).⁵ In the context of our program, the

⁵ <http://wenger-trayner.com/resources/what-is-a-community-of-practice/>

domain is content strategy itself. The community has established itself via conferences and publications since the late 1990s, mainly in North America, where the discipline was founded, and in the UK. In Germany, France, and other countries, slightly different approaches were chosen. One characteristic of the community is the use of the terms “content strategy” and “content strategist” for self-identification and the desire to defend this use against its appropriation by other professions, especially content marketing (professionals outside the content strategy community tend to label themselves as content strategists without the claim to limit its use. Often, they use “content strategy” and “content strategist” in a completely non-terminological sense). The community is an online community, where the discipline of content strategy is negotiated and discussed. The practice comprises the practice with various clients in private and public companies.

Wenger writes that identity is related to the membership in communities, and includes participation as well as non-participation and exclusion as well as inclusion. The individual and the collective/community are related to each other in an intense and reciprocal manner. Issues of identity are an integral aspect of a social theory of learning (Wenger, 1998, p. 145). Wenger understands identity as negotiated experience of self in terms of participation and reification. Human beings construct who they are by participative experience and reificative projections. Members of a community of practice share mutual engagement, joint enterprise, and shared repertoire. Practice is based upon a shared history of learning, identity upon a learning trajectory. Identity is temporal and ongoing. Sensemaking is ongoing (Weick, 1995).

After the online socialization phase, the group of students form the core of a community of practice. Now, they are prepared to move to the online learning hub where other COS cohorts, teachers, and facilitators communicate and collaborate in more than one hundred open-course channels and many additional private channels. Now, they meet face to face as well. In listening and learning, reflecting and negotiating the COS students search for their identity in the content strategy community. Working on projects and on their master theses, they add new knowledge to their common knowledge base of content strategy.

The didactical approach of the program is also indebted to Georg Siemens' and Stephen Downes'

theory of connectivism. Learning processes in the program are governed by the principles of connectivism: autonomy, openness, diversity, and connectedness/interaction (Siemens, 2005). Our students should aggregate content, remix and repurpose it, and feed it forward on the Web and other platforms, according to Stephen Downes (2012, p. 479). The culture of the content strategy program is based on this open approach. Students and teachers are continually asked to publish open educational resources, and the students reflect their learning process and its transfer into their work, mostly in public reflective portfolios. Based on the emergent learning approach (Williams, 2011), we provide an open learning space to foster emergent learning.

The common basis of these theories is the importance of reflection.

Reframing

With Respect to Content

Schön's approach (1983, 1987) makes it possible to describe the knowledge which is specific to content strategy in a way which makes it easy to focus on the essential properties of this discipline. Content strategy is a practice of content professionals based on specific types of research or inquiry carried out during a content strategy project. This practice is not the application of science or scientific knowledge. But like other practices of professionals it encompasses characteristic forms of research. This research depends on an initial framing and usually leads to one or more reframings of the situation.

Content strategy can well be described as a specific way of framing an activity in a professional context: namely, the planning of public and at least partially digital content of an organization. The exploration of a complex, multidimensional situation is characteristic for content strategists and distinguishes their practice from rule based procedures which analyze content, stakeholders, and other actors only with a means-to-an-end perspective in the sense described by Schön (1983) as "technical rationality." Characteristic of this framing are:

- Framing a business problem as a content problem
- Stakeholder research and business requirements
- Qualitative and quantitative content auditing
- Definition of a message architecture
- Systematic definition of properties of *content* (content models, voice and tone)

- Definition of content-related governance (strategy, standards, policies)
- Editorial planning

The appreciative systems can be different. In fact, there is:

- The evaluation according to marketing criteria
- The evaluation according to technical efficiency criteria
- The evaluation according to criteria of user experience
- The evaluation according to criteria of content, e.g. journalistic quality

However, these different appreciative systems do not change the overall framing. In our teaching, we have had the experience that content strategists and content marketing specialists with very different person appreciative systems can successfully cooperate on the base of a common frame.

Alternative Framings

If content strategy primarily means framing business problems related to communication in a large sense as content problems and solving them with a series of related research methods, then the question arises whether there are alternatives. An alternative is to view these problems primarily as problems of search engine optimization; another method is to start primarily from the brand point of view, and the traditional method of user experience design also differs in use from the content strategy. All these methods, however, have characteristically not created their own systematics with regard to the contents, but they are *sui generis* practices. From the content strategic point of view, parts of them can then be reframed, but they are taken out of their original context. Such remodelling is, for example, the translation of brand attributes into the core messages of a message architecture. The message architecture can be understood as the content-strategic view of the brand messages.

Content Strategy as Research

Characteristic for content strategy is that it proceeds analytically, that it happens in all phases as research. This approach can be understood as the basis of a specific professionalism of content strategists, and, due to this research-oriented approach, the reflective practitioner model is well suited to describe the

Content Strategy as Practical Knowledge

activities of content strategy, even if one cannot necessarily already speak of a profession of content strategists. It follows that teaching content strategy is, above all, a lesson in framing and in these research practices. We have practiced this in our program so far, even if we did not base our theories on the theories of Schön at the beginning.

At this stage, it is difficult to say whether content strategy will evolve to a fully featured profession with corresponding roles in companies and agencies or whether it will remain a practice carried out by content professionals framed by additional or even competing roles (e.g., marketing, technical communication, or content management).

With Respect to Pedagogy

A content strategist seems to be the perfect example of Schön's reflective practitioner, although the need for a content strategy was not that obvious in 1983. Content strategists as practitioners of other disciplines somehow succeed to make sense of complexity and to reduce uncertainty in their day-to-day practice.

In the study program content strategy, the students get to know and to understand the constants of content strategy—the language, media, the underlying theories, and the models about problem setting. They learn by communicating with their teachers who work as content strategists. Of course, they get to know professional pluralism and competing theories. As the students work and study, they take ideas into their work environments and start to react to challenges in slightly different ways than before. In most cases, project work is done in the company and is approved as coursework as well. When the students are stuck in a problem, the teacher helps the students to reflect, to reframe the problem and to find new hypotheses.

The aspect of reflection is further encouraged as the students create their own public reflecting portfolios. They are asked to write portfolio posts about their learning experiences and to reflect how the transfer what was learned into their practice. They work on their portfolio during the study program.

Furthermore, the teachers are practitioners. There is no book of pedagogy which explains how to teach in a master's study program—mostly online—in the field of content strategy with students who should study full time while working. In online training courses, the teachers get the opportunity to reflect their teaching

experience, to discuss the framework of teaching online, and to do a kind of job-shadowing by observing a colleague in his or her online lessons.

Conclusion

What does Schön's (1983) concept contribute to understanding the content strategy? What results from the practice of our teaching for the discipline of content strategy? Content strategy can be taught as an analytical practice focused on a new framing to solve the problems of organizations with their content. However, it cannot be taught and described as a systematic knowledge with which to solve these problems. Rather, the constructive or design part of the content strategy proves to be a collective task or practice by which organizations solve their problems in specific situations. Content as an independent component is just as much a chimera as the role of "content strategist."

Teaching content strategy—in a way that is usable and useful for students and teachers—challenges us to frame and reframe the problem. Having debated Schön's approach in such detail will help us to make reflection-in-doing more visible in learning and teaching.

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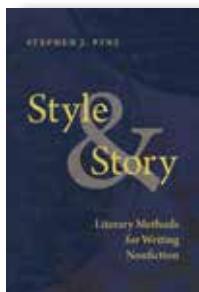
Books Reviewed in This Issue

Style and Story: Literary Methods for Writing Nonfiction	188
Stephen J. Pyne	
Using Conversation Analysis for Business and Management Students.....	188
David Greatbatch and Timothy Clark	
A2Z+: Alphabets & Signs.....	189
Julian Rothenstein, ed.	
Journalism Under Fire: Protecting the Future of Investigative Reporting	190
Stephen Gillers	
About Design: Insights + Provocations for Graphic Design Enthusiasts.....	191
Gordon Salchow	
The Craft of Creativity.....	191
Matthew A. Cronin and Jeffrey Loewenstein	
Strategic Communication: An Introduction.....	192
Jesper Falkheimer and Mats Heide	
Video Marketing Strategy: Harness the Power of Online Video to Drive Brand Growth	193
Jon Mowat	
Culture Is Not Always Popular: Fifteen Years of Design Observer	194
Michael Bierut and Jessica Helfand	

Citizenship and Advocacy in Technical Communication: Scholarly and Pedagogical Perspectives	195
Godwin Y. Agboka and Natalia Matveeva, eds.	
Generative Design: Visualize, Program, and Create with JavaScript in p5.js.....	195
Benedikt Gross, Hartmut Bohnacker, Julia Laub, and Claudio Lazzeroni	
Teaching Professional and Technical Communication: A Practicum in a Book.....	196
Tracy Bridgeford, ed.	
The Language of Graphic Design: An Illustrated Handbook for Understanding Fundamental Design Principles	197
Richard Poulin	
The Teacher's Role in the Changing Globalizing World: Resources and Challenges Related to the Professional Work of Teaching	198
Hannele Niemi, Auli Toom, Arto Kallioniemi, and Jari Laverne, eds.	
Outsourcing Technical Writing: A Primer.....	198
Barry Saiff	
Readers' Liberation: The Literary Agenda	199
Jonathan Rose	
The Messy Middle: Finding Your Way Through the Hardest and Most Crucial Part of Any Bold Venture	200
Scott Belsky	

Style and Story: Literary Methods for Writing Nonfiction

Stephen J. Pyne. 2018. Tucson, AZ: The University of Arizona Press. [ISBN 978-0-8165-3789-1. 200 pages, including index. USD\$19.95 (softcover).]



Pyne literally uses a “novel” method to illustrate how nonfiction can be improved by applying the power of openings and closings used in storytelling. He makes the rightful claim that all people love reading stories. Having said this, Pyne proceeds to give us two rules that must govern the use of storytelling

in nonfiction. First, we cannot make anything up, not even dialog that might have occurred. The second rule is not to leave anything out that will affect understanding. The voice we use and the approach taken can influence the reader, so they must never be used to deceive.

Pyne provides numerous examples that demonstrate how common literary techniques can be used to lift the content of a nonfiction piece from instructional to captivating. Irony has been commonly used in the literary world over the past century. Plato’s lectures are lost except for his popular *Dialogues*. William Shakespeare used Alliteration to turn history into plays. Some of the other literary techniques illustrated in *Style and Story: Literary Methods for Writing Nonfiction* are: Parody, Satire, Saga, Allegory, and Argument.

For example, Pyne considers Gibbon’s tale about the Roman Empire. The book was written as Cicero would have spoken. But Gibbon wisely uses the tool of Parallelism to integrate much information into a short space. Historians who reference Gibbon’s work most often quote those parallel paragraphs. Pyne includes an example of Parody written by Andy Byron; this fake letter in an academic voice denies Indiana Jones requested tenure at a college’s Department of Anthropology. Wallace Stegner created a Saga from a collection of essays/journals about the desert crossings of fresh Mormon converts who were escaping the poverty of Cornwall and Wales. An example of Allegory is a piece written by John McFee about Plymouth Rock. It has splintered several times, been moved, and reinforced with bars. Yet it remains a symbol for America and the rocky times it has/is enduring.

Technical communicators in the corporate arena are limited to writing procedural manuals, with an occasional task of marketing writing for the web thrown in. Often left to the subject matter experts (SMEs) are the white papers, explanatory materials, and concept writing which could benefit from applying principles demonstrated by Pyne. Although SMEs are less forgiving when technical communicators alter their content, they may be pleased with the addition of a literary-style opening and closing that helps capture the interest of intended readers.

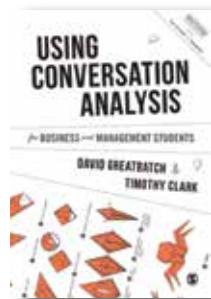
Style and Story reinforces the fact that good design improves reader comprehension, while poor design detracts from the content. Design does not always have to be of a graphic nature. Written stories leap off the page with the opening voice of the writer “leading the way” to important content, followed by a closing designed to satisfy the reader.

Donna Ford

Donna Ford has been an STC member and a technical writer in the hardware, software, and government healthcare industries. She holds an Information Design certificate from Bentley College. Donna is an author who also reviews books online for the US Review of Books.

Using Conversation Analysis for Business and Management Students

David Greatbatch and Timothy Clark. 2018. Thousand Oaks, CA: SAGE Publications. [ISBN 978-1-4739-4826-6. 110 pages, including index. US\$29.00 (softcover).]



Research design is one of the most difficult tasks that both advanced undergraduates and graduate students must learn. Students in business, technical writing, and other fields that use both qualitative and quantitative research can easily become overwhelmed with the sheer amount of research methodologies available to them. Greatbatch and Clark’s *Using Conversation Analysis for Business and Management Students* is the latest in the *Mastering Business Research Series*, edited by Bill Lee, Mark NK Saunders, and VK Narayanan. The aim of each book in this series is to illuminate a research method for

students undertaking research in the business fields; however, Greatbatch and Clark's book would be just as useful for upper level students in technical communication and other related fields.

Using Conversation Analysis is concise and well organized. The introduction chapter begins with defining conversational analysis (CA), and then takes the reader through the general history and uses of this research methodology. Subsequent chapters cover the philosophical assumptions of this methodology, the various contexts and ways in which to use CA, an overview of studies that have used CA, and a discussion of the strengths and weaknesses of the methodology. Each chapter is followed by a short summary of the main points covered within the chapter.

The greatest strength of Greatbatch and Clark's text is the clear explanation of what CA does, and does not, do. As a researcher who often employs both conversational analysis and textual analysis, a related method, I appreciated the careful discussion of the distinctions between CA and other research methodologies. Most research methodologies use a deductive method: that is, they begin with a hypothesis and then set out to disprove that hypothesis. Instead, CA typically begins with a scenario, to which the researcher observes and records, and then begins to tease out patterns in the interaction in an inductive approach. Both conversation and textual analysis are frequently criticized for their lack of empiricism as well as the lack of a focused hypothesis. However, CA can be a powerful tool for exploring the interactions between people, or even groups, in a variety of situations which cannot be measured by empirical methods.

The generous use of examples, both hypothetical and of actual published studies, is another asset of this text. Students often struggle to locate appropriate examples of their chosen methodology. Greatbatch and Clark make this task much simpler and easier to understand by interspersing these examples throughout the text, as well as by discussing the context of each example, how the study used CA, and how the results were then analyzed by the researchers.

Using Conversation Analysis is a practical guide that would be a valuable resource for any upper-level student in the business or communication fields. This book is practical and clear enough for even undergraduates to understand. The chapters cover all the possible uses of conversational analysis in just enough detail and with

enough examples for students to grasp the concept and complete their own research projects.

Nicole St. Germaine-Dilts

Nicole St. Germaine-Dilts is an Associate Professor Associate Professor of English in the Technical and Business Writing Program at Angelo State University. Her research interests include technical communication for international and intercultural audiences and technical communication in the health fields.

A2Z+: Alphabets & Signs

Julian Rothenstein, ed. 2018. Hudson, NY: Princeton Architectural Press. [ISBN 978-1-61689-707-9. 318 pages. US\$40.00 (softcover).]



The *A2Z+: Alphabets & Signs* book is a collection of "alphabets intended to find their public realization on shop fronts and bar signs, elegant eye charges for the optician's patient, letters and signs for technical manuals, fine typographies for beautiful books, a magisterial Constructivist alphabetic ballet, and so on" (p. 16). True to the statement, the book contains a variety of images, signs, and text that share one common element: beautiful design.

One image that I feel sets the mood for the book is found on page 8 and reads "A Man of Letters, UK, c.1890." The image is indeed a man made of letters in which his hat is a 'p' and his face a 'u.' You can stare at the image of the crudely drawn man and continue finding various letters. I find the image to be a wonderful representation of Beatrice Warde's claim, "Printing should be invisible" (p. 12). The book is filled with media that uses beautiful design to convey meaning.

The introduction is clear to point out that the book "has no program and it has no system of presentation; it confuses categories and obeys no rules. It reflects, rather, the taste and interests of the editor: his affection for the wayward as well as the rigorous in matters of design and typography, his love for all manner of alphabets, lettering, typography, and sign-making" (p. 16). *A2Z+* does, however, use full color pages to distinguish one category from the next. These categories range from geographical locations to concepts or themes.

I found the section depicting media from the United Kingdom, starting on page 83, to be my favorite. This section included unique images and concepts, including a “phrenological head mapping the sites of faculties and characteristics, UK, 19th century” (p. 90) and “sign language alphabets, UK, dates unknown” (p. 87). As a psychology undergraduate and someone that spent some time studying sign language, I found these items of interest, especially when considering the design and typography.

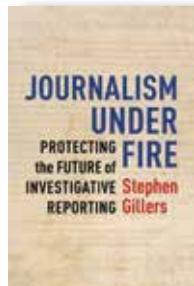
I encourage you to pick up *A2Z+: Alphabets & Signs* and find your favorite designs; there are a multitude to choose from.

Sara Buchanan

Sara Buchanan is an STC member and a technical writer at LCS in Cincinnati, OH. In her free time, she's an avid reader, enjoys cooking, and doting on her cats, Buffy and Spike.

Journalism Under Fire: Protecting the Future of Investigative Reporting

Stephen Gillers. 2018. New York, NY: Columbia University Press. [ISBN 978-0-231-16887-8. 242 pages, including index. US\$28.00 (softcover).]



At a time when the press and investigative journalism are under powerful attack—“fake news,” “enemy of the people”—legal scholar Stephen Gillers has stepped forward with a bold program to protect the future of investigative reporting.

Gillers argues that by uncovering what powerful actors might wish to conceal—abuses of power, threats to democratic institutions, and other dangers—investigative journalism constitutes a public good that is vital to our democracy and benefits us all. Moreover, the press is unique and irreplaceable, safeguarding us by often doing things that others—courts, legislatures—cannot or will not do, or have just overlooked. But to do its job, the press needs protection.

The Press Clause of the First Amendment—“Congress shall make no law abridging ... the freedom of the press,”—provides a foundation for such protection. But, as Gillers shows, the Founding Fathers left it to others—legislatures and the courts—to fill in the details, resulting in a patchwork of laws enforced

primarily by the press’s limited ability to finance litigation. Much of Gillers’ book is devoted to analyzing the current state of journalism law regarding a number of thorny issues, laws of libel, shield laws protecting journalistic sources, press access to government records, and much else.

In recent years, he shows, the Supreme Court has tended to ignore the press clause altogether, granting no protections beyond those entailed by its close cousin, the Speech Clause. Gillers argues that this is a grave mistake. Correctly understood, he believes, the Press Clause grants special protections, rights, and privileges, which the press earns by doing its job well, by exercising editorial judgement in what it chooses to investigate, how it investigates, and what it chooses to report.

However interpreted, the press clause can only do so much. Powerful actors both in and out of government, have many ways to impede the press’s ability to dig up facts or punish it for what it reports—Freedom of Information Act (FOIA) non-compliance, Strategic Litigation Against Public Participation (SLAPP) suits, Ag-gag laws, libel suits filed not to be won, but to punish journalists by making them hire attorneys, to name but a few.

Gillers offers a bold program of reforms to provide a protected space in which journalists can do their job. He would strengthen FOIA to make it more responsive to press requests and less costly to enforce. He advocates a federal anti-SLAPP statute, and a guaranteed right of appeal in libel cases. To replace the loss of advertising revenue that used to support investigative journalism, Gillers would establish a publicly endowed fund for investigative journalism like those that currently exist for the arts and humanities.

Gillers is under no illusions that his program will be adopted anytime soon, but his superb examination of where we are and where we should be headed is immensely valuable, nevertheless.

Patrick Lufkin

Patrick Lufkin is an STC Fellow with experience in computer documentation, newsletter production, and public relations. He reads widely in science, history, and current affairs, as well as on writing and editing. He chairs the Gordon Scholarship for technical communication and co-chairs the Northern California technical communication competition.

About Design: Insights + Provocations for Graphic Design Enthusiasts

Gordon Salchow. 2018. New York: Allworth Press. [ISBN 978-1-62153-654-3. 208 pages, including index. US\$19.99 (softcover).]



About Design: Insights + Provocations for Graphic Design Enthusiasts on the outset appears to be an introductory text for young designers. However, as you dig into the content, it becomes clear that it is intended to serve another

purpose. This book is broken into five sections: Prelude, Form, Aesthetics, Education, and Miscellany. The first three sections provide the basic introductory information one would expect to find in a book about graphic design for students, with treatise on design principles and elements, as well as harmony and balance, and yet there is a problem with this notion.

About Design assumes quite a bit of knowledge from new students, and it does not provide a collection of images to help the reader to visualize and understand the theories it presents. While there are a few minimalistic illustrations provided by the author's daughter (also a designer), the overall lack of images is problematic for a book of its nature. As such, this book seems to be better as a companion to other such resources as it offers some exceptional insights and explanations not found elsewhere. It would not be a good book to stand alone as an introduction to graphic design.

Once you reach the Education section, *About Design* takes on a different track altogether. This section consists mostly of a keynote address given by Salchow as a symposium at the University of the Arts, which is clearly directed to educators and talks of the history of graphic design education in America as well as best curricular practices. It is this section that clearly identifies the book's target audience as design educators, thus it becomes clear that the entire text is intended, not as an introduction to design for students, but instead as a resource for design educators.

Design educators will find *About Design* to be an excellent resource to help explain the basics of design to students, and it also provides a lot of insight into the history of design education in America as well as curricular trends and ideas. It indeed provides

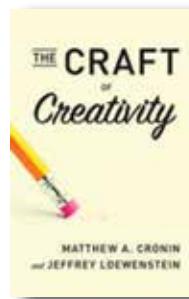
provocations as the title suggests, it contains some bold statements that some designers might take issue with, such as "There is no such thing as an S-curve" (p. 58) and "There is no such thing as negative space" (p. 73). Yet these statements include explanations that support Salchow's arguments that might make even the most determined designer reconsider their position. Besides appealing to design educators, this book will also be an excellent resource for students learning their trade, as it is a suitable resource to supplement lectures given in class or read along with other introductory texts.

Amanda Horton

Amanda Horton holds an MFA in Design and currently teaches graduate and undergraduate courses at the University of Central Oklahoma (UCO) in the areas of design technology, design studio, and history of graphic design. She is also the director of the Design History Minor at UCO.

The Craft of Creativity

Matthew A. Cronin and Jeffrey Loewenstein. 2018. Stanford, CA: Stanford University Press. [ISBN 978-1-5036-0507-7. 270 pages, including index. US\$29.95 (softcover).]



What do trains and kingfishers have in common? If you thought twice about the answer, then you've just begun the process of changing your perspective. This is the cornerstone of creativity according to Cronin and Loewenstein.

In *The Craft of Creativity*, the authors challenge readers to change their perspectives on creativity itself. Many believe they're incapable of being creative or that creativity is only bestowed on special people. Cronin and Loewenstein use stories, riddles, and puzzles as a foundation to make it clear that anyone can be creative. Creativity is a skill that requires time and effort to develop; hence, it is a craft.

We often focus on creative products instead of the process it takes to make them. But being creative involves "developing different ways of thinking so that what was inconceivable becomes thinkable" (p. 2). In Japan, the Shinkansen Train is famous for its long nose. This nose is the product of a creative process in which engineers reimaged how to make the train quieter

while traveling through tunnels. The realization that a kingfisher's streamlined beak enables it to handle rapid changes in pressure, and that this concept could be applied to the train, is an example of "insight." And insights often lead to "inventions" and "enlightenments," which help us advance our stories, turn "fiction into reality" (p. 119), and build new knowledge.

"Cues" signal when a change of perspective is needed. For example, "impasse" provides "the feeling that we are stuck and that there is nothing we can do to productively advance our story" (p. 133). The Stoplight Model of Creativity tells us to "stop advancing our story and instead turn our energies to our perspective" (p. 54). When the light is green, we use craft to advance our story. But when it's red, that's our cue to switch to creativity. "Cognitive tools" can help us depart from our current perspectives. We can use "activation" to bring concepts into our working memory, form "analogies," join concepts together that are initially inconceivable as a "combination," and swap one concept for another to make sense of something (*recategorization*).

Creativity also requires commitment. Uncertainty causes us to second-guess ourselves and debate if creativity is even worthwhile. We cling tightly to our assumptions and stepping away from them is intimidating. Therefore to fully develop our craft of creativity, we must learn the importance of "managing our emotions and maintaining our motivation to continue our stories in the face of uncertainty" (p. 188).

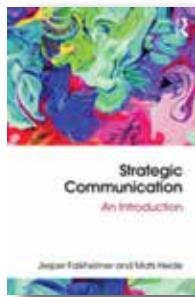
The "craft of creativity" concept is explained many times throughout *The Craft of Creativity*. However, the final chapter provides its simplest form: "Craft is how we make use of creativity, and creativity is how we extend craft" (p. 219). Cronin and Loewenstein certainly make it hard to deny that creativity is central to the craft of technical communication. And in the face of uncertainty driven by the rise of artificial intelligence and machine learning, it seems creativity may be the most important skill that technical communicators can develop.

Amy Dunbar

Amy Dunbar is an STC member and a technical writer for Pearson VUE in Bloomington, MN. She has a degree in biology and a graduate certificate in technical communication from the University of Minnesota. Amy's professional interests include content marketing, video production, and information design.

Strategic Communication: An Introduction

Jesper Falkheimer and Mats Heide. 2018. New York, NY: Routledge. [ISBN 978-1-1386-5703-8]. 159 pages, including index. US\$39.95 (softcover).]



Jesper Falkheimer and Mats Heide, professors in strategic communication at Lund University, Sweden, have written what they intend to be an undergraduate textbook. Indeed, they claim *Strategic Communication: An Introduction* to be the first such textbook to cover strategic communication—based not only on empirical research but also on their own experience from practice. The authors' "main aim . . . is to give . . . students a general overview of theories, concepts and methods in strategic communication" (p. vii).

Strategic Communication is divided into three sections. In the first section (Fundamentals), the authors examine the basic parts that comprise strategic communication (strategy and communication) and then reassemble them to define strategic communication as the "purposeful use of communication by an organization to fulfill its mission" (p. vii). Strategic communication includes internal, external, formal and informal communication, and occurs at all levels of an organization. In discussing strategic communication, Falkheimer and Heide differentiate it from corporate communication and communication management.

In Part II (Communication processes and organizations), Falkheimer and Heide delve into the important functions of strategic communication. With society becoming more "liquid," having more potential communicators, "strategic communication capabilities have become more relevant . . . , used to communicate, negotiate, and shape perceptions of legitimacy between organizations and society" (p. 91). One such capability is communicating organizational changes, sometimes in crisis mode, to board members, consumers, and other stakeholders. Not only do these communications happen outside the organization, but, most importantly, the culture of a successful organization is based on effective internal strategic communication.

The third part of *Strategic Communication* (Future developments) highlights future trends Falkheimer and Heide would like to see. Because it is hard to quantify the value of strategic communication to

an organization, they stress the continuing need for research, both traditional quantitative research as well as observations of strategic communication in practice, to provide this kind of analysis. In addition, the authors challenge communicators to continually be aware of the ethical issues involved in applying the tactics of strategic communication. Falkheimer and Heide also emphasize the need for flexibility in communication planning that allows for more innovation. They conclude their look into the future by introducing the communicative organization model, launched in Europe in 2010, as a goal for organizations.

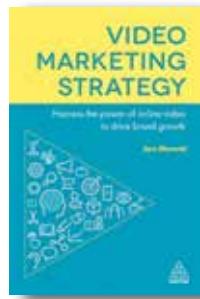
As European academics, Falkheimer and Heide have a decidedly European point of view on the history and practice of strategic communication, citing research by many of their peers and examples of organizations from within a European context, such as the Swedish national police authority. Yet many of their observations align with what I have experienced here in the US. For this reason, I think this book would be an excellent resource for anyone who wants a universal look at the practice of strategic communication. The authors themselves recommend *Strategic Communication* for “practitioners in communications, management, marketing . . . who want to develop their thinking and doing” (p. xiv).

Linda Davis

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds an MA in Communication Management and has specialized in strategic communication planning, publication management, writing, and editing for more than 25 years.

Video Marketing Strategy: Harness the Power of Online Video to Drive Brand Growth

Jon Mowat. 2018. London, England: Kogan Page Limited. [ISBN 978-0-7494-8159-9. 278 pages, including index. US\$29.95 (softcover).]



Over the past decade, the rise of social media and the Internet has disrupted nearly every business area. In the past, businesses budgeted money for television advertising. However, with the digital age, social media advertising is taking over causing marketers to change their strategy.

In *Video Marketing Strategy: Harness the Power of Online Video to Drive Grand Growth*, Mowat says, “We are entering a Video First world, backed by the biggest brands and social media platforms . . . [V]ideo has proven itself to be an incredibly powerful way of affecting behaviour, and technology has advanced to the point where video can take over” (p. xviii).

The author sets the stage in Section 1, “Video marketing strategy: an introduction,” by describing video marketing and why it works. He immediately captures the reader by describing the Razor Wars between Gillette and new subscription-based startups. Until then, Gillette had been investing millions of dollars into fending off its rival Unilever. But, a start-up, the Dollar Shave Club, suddenly appeared on the scene with YouTube videos to market their products. Because of the success of the Club’s products, Unilever purchased the Dollar Shave Club for \$1 billion. Mowat noted there was no advantage or innovation in the blades. But, “by using innovative marketing techniques they changed the playing field and built a massive brand in just four years” (p. 5).

Mowat includes a link to their March 2012 video in the book’s website, www.video-marketingstrategy.com, which also contains all the book’s example videos.

The meat of the book, Section 2, “Creating great videos”, addresses how to plan videos, along with the magic formula: Story/Planning X Activation = Great Content. Stories convey emotion, such as happy, sad, afraid, and angry. The next tier of emotions include security, enjoyment, excitement, adventure, autonomy, and discipline. It’s important to convey emotion in videos, as people generally see about 5,000 ads a day. Mowat stresses your video must pass the “So What?” test, as the modern consumer has decision fatigue. He includes important details in this section, such as the length of titles for YouTube videos where Mowat recommends keeping it under 70 characters, and suggests doing repeated testing of the thumbnails.

In Section 3, “DIY video projects,” he walks you through creating and editing your own video projects. As a former camera and edit trainer for the BBC, Mowat has taught many people how to make videos using their smartphone. He offers simple, but great, suggestions, such as taking a minute to record background noise without the interviewee talking. You can later use the background if you need to edit in your own sound effects.

Lastly, in Section 4, “Creating effective video campaigns,” Mowat breaks down video campaigns with their many entry points and simplifies it to a six-step process.

You’ll find the numerous references and *Video Marketing Strategy*’s website of video links tremendously helpful when planning your next marketing video.

Rhonda Lunemann

Rhonda Lunemann is a technical writer with Siemens PLM Software, is a senior member and serves on the Program Committee of STC’s Twin Cities Chapter.

Culture Is Not Always Popular: Fifteen Years of Design Observer

Michael Bierut and Jessica Helfand. 2018. Cambridge, MA: MIT Press. [ISBN 978-0-262-03910-9. 232 pages, including index. US\$39.95.]



The Design Observer is a website founded in 2003 by leading designer/writers Rick Poynor, William Drenttel, Jessica Helfand, and Michael Beirut that publishes articles broadly on topics relating to design and culture. *Culture is Not Always Popular: Fifteen Years of the Design Observer* is a celebration of the site’s 15th anniversary and the result of the Design Observer cofounders’, Bierut and Helfand, efforts.

This book contains 67 articles from an assortment of contributors, many of whom are well respected leaders of the design community. The articles are presented in five categories: Critical Commentary, Cultural Investigation, Will and Whimsy, Reason and Responsibility, and New Vernaculars. The authors selected these articles as a representative of the diversity and dynamic topics that are often discussed on the site but not necessarily as a “best of” collection. Each article is presented with its original publication date on the Design Observer website which is helpful in establishing a frame of reference, though many of the topics are still relevant today. Also included is a selection of two or three of the comments, which in many cases is a brief sampling of what was originally posted as a response, and the editors did not shy away

from posting comments that were counter to the author’s ideas or opinions, indicating in many instances that a heated debate had taken place. Do not skip the comments—they contain good information and are also often very entertaining to read.

One may wonder what the benefits of reading this collection of essays would be, since all the articles can be accessed for free on the website. The collection is carefully curated representing the diversity of topics covered over the years at Design Observer, which is nice if you don’t have time to read all 6,700 plus articles on the website. Additionally, since there are only a few comments published in the book alongside each article you can avoid falling down the potential “rabbit hole” of comments and debate that follows many of the site’s articles.

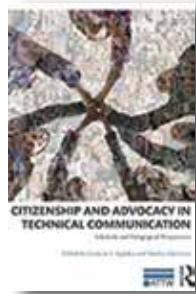
Culture is Not Always Popular does have its downsides. While the original articles were often accompanied by images that supported the content, these images are sparsely included in the book, sometimes to the detriment of the article’s content. For example, “Comparakeet” by Kathleen Meaney originally displayed a collection of fourteen images for comparison on the website, however the book’s published version only includes four images. Many of the missing images are referenced in the article, and their exclusion limits the readers understanding of the essay’s content. Despite this, there are more reasons than not to enjoy the collection of essays within *Culture is Not Always Popular*; the articles are often witty and always intelligent, and the book is indeed a sampling of the culture of design over the last fifteen years.

Amanda Horton

Amanda Horton holds an MFA in Design and currently teaches graduate and undergraduate courses at the University of Central Oklahoma in the areas of design technology, design studio, and history of graphic design. Ms. Horton is also the director of the Design History Minor at UCO.

Citizenship and Advocacy in Technical Communication: Scholarly and Pedagogical Perspectives

Godwin Y. Agboka and Natalia Matveeva, eds. 2018. New York, NY: Routledge. [ISBN 978-1-138-56080-2. 332 pages, including index. US\$45.95 (softcover).]



Citizenship and Advocacy in Technical Communication: Scholarly and Pedagogical Perspectives has the privilege of being the first edited collection on this topic. Though, as the authors admit, advocacy work has been a longstanding part of the technical communication field, the collection seeks to cover “the complexities of undertaking advocacy work in technical and professional communication, including local grant writing activities, cosmopolitanism and global transnational rhetoric, digital citizenship and social media use, strategic and tactical communication, and diversity and social justice” (p. xxix). The authors define advocacy as “the process of using a combination of academic and practical skills and knowledge systems to enact social justice with the goal to improving the quality of life for communities” (p. xxix).

The book is broken into 14 chapters that span three main sections: “Defining Core Competencies for Local and Global Advocacy and Citizenship,” “Choosing the Right Approaches to Advocacy and Community Engagement: Working with a Real Client,” and “Introducing Advocacy Techniques in the Classroom.” It is geared towards academics interested in these topics. Many of the approaches discussed, like “asset-based inquiry” (p. 23); “intercultural analysis” (p. 111); and “community-engaged learning” (p. 223), will be familiar to academic readers but possibly unfamiliar to practitioners. The book’s chapters are also written from the academics’ perspectives working within institutions of higher education, though many of the authors describe work with communities as diverse as technical communication students in online classes, a chemistry department in a university, and science journalists. So, overall, *Citizenship and Advocacy in Technical Communication* provides a wide-ranging view of the topic of advocacy for academics working in a variety of contexts (research-based, client-based, classroom-based, etc.).

At the same time, practitioners of advocacy work beyond academia will probably find the collection to be difficult to parse. Technical communicators wishing to work with a local non-profit or activist group, for instance, may struggle to understand complex terms used throughout the collection. Such readers will gain a valuable insight into the academic field of technical communication and the work accomplished within this field around the goal of improving the quality of life for communities. Thus, practitioners wishing to collaborate with academics on projects of mutual interest may find the collection useful for understanding how such projects are launched and managed.

Academic readers, on the other hand, will find a plethora of interesting approaches to advocacy work that they can apply immediately. Such readers looking to improve their existing efforts to improve the lives of a variety of stakeholders, or to begin advocating on behalf of new community members, will find many best practices and novel approaches within the collection.

Overall, *Citizenship and Advocacy in Technical Communication* is an exciting and necessary contribution to academic scholarship on this topic that will likely have a large impact on future conversations.

Guiseppe Getto

Guiseppe Getto is a faculty member at East Carolina University. He is also President and Founder of Content Garden, Inc., a digital marketing and UX consulting firm.

Generative Design: Visualize, Program, and Create with JavaScript in p5.js

Benedikt Gross, Hartmut Bohnacker, Julia Laub, and Claudio Lazzeroni. 2018. Hudson, NY: Princeton Architectural Press. [ISBN 978-1-61689-758-1. 256 pages. US \$45.00 (softcover).]



Generative Design: Visualize, Program, and Create with JavaScript in p5.js is an attractive, engaging book, from the moment one gives it a quick glance and is amazed by the picture’s art quality, to the moment one digs into the details of the code and one’s mind is exposed to the possibilities of generative design.

The book’s main content is titled “Basic Principles,” which makes it obvious to the reader that this is not a

book to gain expertise in generative design, but more of an introduction to the subject and the use of p5.js.

The “Basic Principles” section is divided into five sections: Introduction to p5.js, Color, Shape, Type, and Image. The “Introduction to p5.js” section is heavily focused on JavaScript language syntax and concepts. Any readers already familiar with any programming language will go rapidly through this section without any issues.

Even if you have no prior programming experience, I would recommend you try reading the Introduction, and if you feel overwhelmed with programming concepts, pause for a moment, and go online and look for a quick introduction to a beginners JavaScript course. Once you understand the JavaScript fundamentals, you can more easily take advantage of what *Generative Design* has to offer.

The rest of the subchapters are example-based exercises that guide you by the hand regarding the important code pieces that are critical for creating the different designs and algorithms. The reader does not need to manually copy these code examples from the book, as the book includes a link to its website where you can download all the examples (source code) to run them on your computer. Besides the source code download links, the website allows you to run the examples directly in it without downloading all the source code. However, I would recommend that readers download the source code as that would allow them to edit the source code and experiment with the variables in each example. You may be surprised at how easy it is to create completely new designs by experimenting with the code variables.

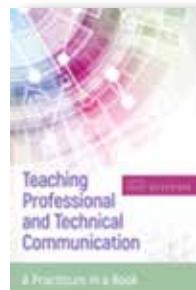
I greatly enjoyed reading *Generative Design*. This book is one that will remain on my bookshelf and be referred to over and over as code samples have very interesting algorithms that I want to review a second time to get a deeper understanding and train my brain to think with the generative design mindset.

Uriel Cota

Uriel Cota is a civil engineer, software developer, and former teacher with over 10 years of experience in Web development.

Teaching Professional and Technical Communication: A Practicum in a Book

Tracy Bridgeford, ed. 2018. Logan, UT: Utah State University Press. [ISBN 978-1-60732-679-3. 248 pages, including index. US\$30.95 (softcover).]



When I first taught technical writing, I had no pedagogical tools except some notes from another instructor, a few learning goals, and a course description. Over the years, I honed my course content through trial and error, applying ideas from conferences and talks with other faculty, textbooks, and journal articles. I wish I had had *Teaching Professional and Technical Communication: A Practicum in a Book*, a book that presents “pragmatic knowledge about instruction” (p 3).

Targeted to those new to teaching professional and technical communications (PTC), this book offers thirteen chapters on core competencies, from basics like teaching rhetorical analysis or writing procedures to more advanced topics like teaching collaboration or intercultural communication. Terms are well defined, and the content written in a clear style. While reading this, new teaching assistants will feel welcomed to the profession; seasoned professionals will have a reference text to support their current practices.

Each chapter is structured similarly with a brief literature review that sets the topic’s context and theory. For those teaching in PhD programs, whether specific to technical and professional writing or composition and rhetoric more generally, the chapters provide excellent references for assigning further reading for graduate students. Each chapter ends with discussion questions perfect for the graduate seminar. For those in the classroom, the chapters deliver practical approaches. The authors start with a classroom scenario for teaching a competency, such as presentations, and narrate through teaching that competency, including practical applications for in-class activities and assignment sequences.

It’s about time our field gets a text like this, one that helps educate new instructors on some of the best practices for introductory PTC and service courses. As a well-written and practical book, it is sure to be widely disseminated—to STEM faculty, to composition faculty, and to graduate students assigned to a technical writing course for the first time.

Expect future texts to expand upon this material. For example, *Teaching Professional and Technical Communication* has an excellent chapter that argues for teaching style, especially for non-majors, but the book doesn't address how to teach the use of and creation of style guides, a topic other academics will likely tackle. Future texts will expand the scope, moving from a practicum for introductory material to practicums on a wider and deeper range of topics.

The text isn't perfect. For example, the index is clearly an amalgamation of entries created by the various chapter authors rather than a cohesive product of a professional indexer. One entry is "body language during a presentation," but under "presentations" there is no entry for "body language and" (p. 241). Also, the entry for "audience" (p. 241) has fifteen page numbers with no subentries and an additional three pages for the lone subentry "and presentations." Unfortunately, most academic texts suffer from similar indexing issues given the costs of hiring an indexer.

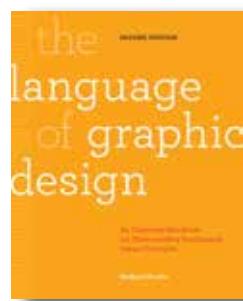
Regardless, Bridgeford must be commended for curating what is bound to become a foundational text.

Kelly A. Harrison

Kelly A. Harrison, MFA, teaches technical writing at Stanford University. In collaboration with a colleague, she recently received an NEH grant for curriculum development at San José State University, where she has taught a range of writing courses. She has written print and online content for various high-tech companies.

The Language of Graphic Design: An Illustrated Handbook for Understanding Fundamental Design Principles

Richard Poulin. 2018. Revised and Updated edition. Beverly, MA: Rockport Publishers. [ISBN 978-1-63159-617-9. 296 pages, including index. US\$29.99 (softcover).]



In *The Language of Graphic Design: An Illustrated Handbook for Understanding Fundamental Design Principles*, Poulin provides aspiring graphic designers with an accessible entry-point into the principles of the field. While this book might give technical communicators who simply want to broaden their understanding of visual design

principles more information than they need, the book's clear, concise descriptions of the principles mixed with compelling examples of the principles in action will keep even reluctant technical communicators interested.

Poulin describes graphic design as a "unique visual language with its own alphabet, lexicon (vocabulary), and syntax (sentence structure)" (p. 6). Each chapter in the book represents one of the 26 graphic design elements, such as line, point, symmetry, image, pattern, and typography. For each element, he provides an extensive definition, a description of the uses of each element, a history of the element in use, and a biography of an important graphic design practitioner who used the element heavily in his or her work. The biography sections also teach the reader the history of the field and show the field's evolution through time. Each chapter differs in length and scope depending on the complexity of the element Poulin is discussing.

The book's most compelling aspect is the myriad visual examples of each element in practice in actual flyers, posters, artworks, student projects, and book covers throughout each chapter. The reader will likely recognize many of these examples, such as the new book covers for Albert Camus' *The Stranger*, Ernest Hemingway's *The Sun Also Rises*, and Charles Shaw wine labels. Because the concepts in each chapter are mostly discrete, readers can choose either to read this book linearly or to skip around to the sections they would like to know more about, which makes *The Language of Graphic Design* a handy reference book for technical communicators who are concerned with the visual representation of written materials and document design.

While the book is visually striking, the setup of all the text and images is sometimes jarring. The introductory definition for each element is often broken up by the visual examples and biography sections, which forces the reader either to skip past the interruptions to read the text in a coherent manner or jump from image to image and section to section, which can make reading comprehension difficult. However, this is a small problem in a highly informative, engaging book.

Dylan Schrader

Dylan Schrader is a graduate student in the MA in Professional Communication program at the University of Alabama in Huntsville, where he also works as a grant researcher in the Office for Proposal Development.

The Teacher's Role in the Changing Globalizing World: Resources and Challenges Related to the Professional Work of Teaching

Hannele Niemi, Auli Toom, Arto Kallioniemi, and Jari Laverne, eds. 2018. Brill. 150 pages. ISBN: 978-90-04-37257-3. US\$104.00 (softcover).



The word that comes to mind when I think of the contents of *The Teacher's Role in the Changing Globalizing World: Resources and Challenges Related to the Professional Work of Teaching* is “smorgasbord,” as in a smorgasbord of interesting ideas. The chosen works ably address with their smorgasbord of ideas the notion that

the role of teachers today is changing throughout the world. Today, a teacher can do more than teach in a classroom. A teacher can work in new learning environments, especially with an online component. This book addresses this issue as it pertains to the teaching professional and how to protect and address the teacher’s role. Whether you are simply looking to learn more about this topic or want a thoughtful read for your students, *The Teacher's Role in the Changing Globalizing World* could be a good choice for you.

I was impressed that the articles reflect issues in several locations including China, Estonia, Finland, Malta, Singapore, and the USA. The selection that addresses issues in China, for example, notes that with today’s new technologies a teacher’s traditional role is “facing more and more challenges . . . Modern teachers are expected to be not only the organizers and designers of the educational process, but also mentors and partners of students in the learning process” (p. 109). The author of this piece on these issues in China also notes that current teacher education in China promotes professional development considering today’s challenges.

In “Teaching in the USA,” we see Dr. Gerald K. LeTendre write about how “the U.S. teaching force presents some unique paradoxes” (p. 91). One of LeTendre’s concerns is how American teachers lack professional autonomy: “Although the U.S. has a highly decentralized educational system, teachers report less involvement in school decisions than in nations with centralized systems like Japan.” He further notes that “paradoxes can be linked to specific organizational and cultural factors such as a strong culture of local school control, a politically divisive national culture, and

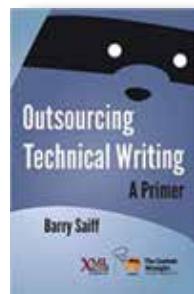
the growing influence of international comparisons and bench-marking” (p. 91). LeTendre is Professor of Education (Education Policy Studies) at Penn State and a co-editor of *The American Journal of Education*. His current research focuses on how technology is changing teacher work roles and teacher professional development around the world.

Jeanette Evans

Jeanette Evans holds an MS in technical communication management from Mercer University. She has worked with groups such as Philips Medical and Cuyahoga Community College doing technical writing and supporting courseware development. Jeanette also co-authored an *Intercom* column on emerging technologies in education and is currently NEO STC newsletter co-editor.

Outsourcing Technical Writing: A Primer

Barry Saiff. 2018. Laguna Hills, CA: XML Press. [ISBN 978-1-937434-64-9. 100 pages. US\$19.95 (softcover).]



Overall, this is a worthwhile, if light, quick read that covers many basics around managing process change for writing groups, while at the same time tackling some of the common myths around outsourcing. There’s nothing particularly revolutionary within its 100 pages, but it hits the spot as the “primer” promised on the cover.

In the Preface, Saiff includes a lengthy personal note that describes his background and the story behind the founding and growth of his own Philippines-based outsourcing company. His philosophies used in running his company and management approach form a common thread throughout the rest of the book and are often referenced, which can be a little distracting.

The first couple of chapters cover the basics of outsourcing, with Chapter 2 tackling many of the myths around outsourcing and arguing that many of the aspects of outsourcing that are often viewed as negatives, can in fact have positive results not just for the organization, but for the existing technical documentation teams too.

The second section, covering Chapters 3 and 4, focus on management techniques and are a useful guide for those new to organizational leadership.

Most of *Outsourcing Technical Writing: A Primer* is devoted to a section entitled “Your Roadmap to Outsourcing Success” but many of the subjects covered could be applied to planning and implementing most types of transformational change. Topics such as process maturity, developing project vision statements and goals, creating plans, budgeting, milestones, metrics, and finding internal sponsorship are of general application.

For those who are considering outsourcing as an operational option, this book concludes with three short, but instructive, case studies, and a sample contract covering the outsourcing of technical writing as a starting point.

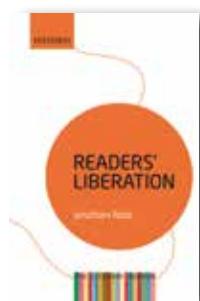
Outsourcing Technical Writing is well laid out and clearly organized, making it easy to dip back into. As such, it can be a useful resource and reference in any technical publication manager’s library, whether they are looking into outsourcing or not.

Alan J. Porter

Alan J. Porter is an STC senior member, a member of the STC-Houston chapter, and has worked in the technical communications field for over thirty years. He is also the author of two XML Press books, *Wiki* and *The Content Pool*.

Readers’ Liberation: The Literary Agenda

Jonathan Rose. 2018. Oxford, United Kingdom: Oxford University Press. [ISBN 978-0-19-872355-4. 228 pages, including index. US\$20.00 (softcover).]



“Fake news” is not a twenty-first century or Trump-era phenomenon. Censorship and mass manipulation have been part of the reading experience that predates the printing press. Freedom and liberation of individuals and societies that read are also part of this experience, and the history of “ordinary readers” has not been something much written about. *Readers’ Liberation: The Literary Agenda* is part of this relatively new research, where Rose uses “correspondence, diaries, memoirs, and marginalia” (p. vi) as well as library rosters, surveys, bookseller records, and other archives “to create a broad narrative history of reading” with a “central theme: that reading can be and has been the most fundamental expression of human freedom, even

in repressive societies” (p. vi). Rose’s book is a captivating reading experience that explores what people read and the connection between reading and larger societal issues.

Rose begins this discussion with a chapter on what it means to be an independent reader and identifies historical movements and the accompanying texts that broke through barriers intended to subdue writers and readers from questioning established institutions like religious and political regimes. Although the scope of this book is on historical reading habits in the United States, Rose provides brief surveys of the most-read books in other countries and correlates those lists with historical political and social movements. Other chapters explore “middlebrow” reading, and social inequality and access to reading materials.

“Dreamers of the Ghetto” demonstrates most eloquently Rose’s claim that “every revolution begins with liberated reading” (p. 2), where he “sketches in a few outlines” a “much bigger story” (p. 87) about the reading experiences of African-American slaves. His history continues into the Jim Crowe era and beyond where readers squarely encounter the effects of segregation and other deliberate actions to keep African-Americans illiterate and controlled. Likewise, “Shakespeare in Prison” details reading lists and the reading experiences of prisoners, a population that is rarely included in any historical portrait.

The last three chapters cover histories of truth and censorship in journalism, the stranglehold of corporate and governmental public relations on mass media, and present-day threats to reading. “Death to Gradgrind,” reveals economic ties between corporate giants and the promotion of the Common Core, “a set of educational standards that promises ‘career and college readiness’” (p. 183). Rose states that the Common Core “cuts out both teachers and parents in shaping educational policy” (p. 184) and has a detrimental effect on reading where classroom texts are composed almost entirely of “snippets,” grossly cut texts that discourage critical thinking. At the university-level, Rose confronts the trend to provide “trigger warnings” before students read assigned texts and the philosophy that higher education should be a “comfortable” experience. No matter what side readers fall on these issues, this last chapter is an excellent wrap up on a book about freedom, liberation, and power of the written word.

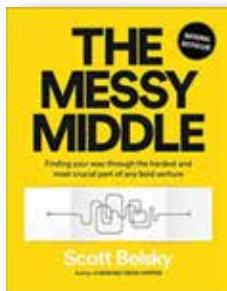
Readers' Liberation would make an excellent text for most courses in English, communication, history, and education. It is also highly recommended as a public read or for book clubs.

Diane Martinez

Diane Martinez is an associate professor of English at Western Carolina University where she teaches technical and professional writing. She previously worked as a technical writer in engineering, an online writing instructor, and an online writing center specialist. She has been with STC since 2005.

The Messy Middle: Finding Your Way Through the Hardest and Most Crucial Part of Any Bold Venture

Scott Belsky. 2018. New York, NY: Portfolio/Penguin. [ISBN: 978-0-7352-1807-9. 398 pages, including index. US\$29.00.]



Today's business world is prime time for starting new ventures. Entrepreneurship is at an all-time high, and it's faster and less expensive to start a new company, project, or side hustle than ever before. It's practically baked into our culture that it's fun and exciting to start something new,

and we celebrate those projects and companies that are successfully completed, whatever that might mean. But these things don't just happen overnight, or with relative ease. There's a winding journey in the middle, and that's what this book discusses.

The Messy Middle: Finding Your Way Through the Hardest and Most Crucial Part of Any Bold Venture is divided into sections about enduring, optimizing, and approaching the finish line. Within each section, there's a series of "chapters," which are typically not more than 2–3 pages long. Each chapter addresses a principle or lesson Belsky learned in going through his own project or company efforts. I was about a third of the way through the book before I realized it wasn't really meant to be read start to finish. The chapters don't usually connect to each other for a logical flow or follow what I'd consider to be a typical project or undertaking timeline. Its layout and the nature of the advice is better designed for a take-what-you-need approach, using the table of contents to look up general topics.

Despite the somewhat unorthodox layout, I found most of the advice to be practical and smart. It's high-level as well, though it has plenty of specific examples to show you the principles in action. It's a little heavy on the "I did this" rhetoric, but that can be applicable if your journey is like Belsky's. While the tidbits were mostly useful, if you read many business or entrepreneurial books, you will probably find a good bit of repetition from those. However, this book collects them all into a thorough, if somewhat wordy, collection.

All in all, I see *The Messy Middle* serving as a good reference book to keep on your shelf. It's easy to navigate and offers some helpful tidbits on an obstacle or celebration you might face during an initiative. If you're facing a particularly thorny specific issue, however, you're probably better served finding a more focused book.

Alyssa Fox

Alyssa Fox is a content strategist and marketing leader who thrives on improving customer experience through brand consistency, relevant content, and integrated sales and support. She has vast management experience across global teams and has worked on numerous cross-functional strategies. Alyssa is currently serving as the Immediate Past President and Nominating Committee Chair of STC.



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Lyn Gattis, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Lyn Gattis at LynGattis@MissouriState.edu.

"Recent & Relevant" does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers' addresses, covering nearly all the articles we have cited, appear in *Ulrich's international periodicals directory*.

Communication

Locating and describing the work of technical communication in an online user network

Swarts, J. (2018). *IEEE Transactions on Professional Communication*, 61(4), 356–371. doi: 10.1109/TPC.2018.2870631

"Online user networks are important points of contact for users who seek help from their peers rather than documentation. . . . This study examines an online user network for an open-source software product and asks how we can study online user networks, with the aim of identifying important people, practices, and relationships associated with the kind of technical communication practiced in those settings. . . . Social network analysis is used to visualize the structural properties of an online user network, in order to identify central figures and their relationships to others. Verbal data-analysis techniques are used to find themes in their contributions."

Results suggest that "[p]eople who are central to the structure of online interaction are important figures in the distribution of the technical communication effort. They engage users in reciprocal exchanges of information and they influence user practices. They are also important as brokers who link users and developers. Broadly, their conversational exchanges are a kind of distributed technical communication." By observing participants in online user networks, technical communicators "can understand what it means to do technical communication and make user networks a more integral part of a broader documentation strategy" and can understand how "technical experts (e.g., software developers) can engage with users as well."

Lyn Gattis

Millennials' views and expectations regarding the communicative and relational behaviors of leaders: Exploring young adults' talk about work

Omlion-Hodges, L. M., & Sugg, C. E. (2019). *Business and Professional Communication Quarterly*, 82(1), 74–100. doi: 10.1177/2329490618808043

According to this study, "by 2025, millennials will comprise 75% of the global workforce" (p. 74). "While research has started to debunk some millennial stereotypes, a gap between this cohort and their predecessors persists. In response, two studies were conducted with matriculating millennials to reveal the expectations they hold regarding typical leader behavior and leader-member relationships. The studies establish millennials' views and communicative and relational expectations of leaders and also help to answer which leader communication behaviors are likely to be valued and potentially most effective with this cohort. This research puts millennial self-report data in conversation with extant research to offer new insight. Suggestions for instructors and managers are included."

Diana Fox Bentele

Theorizing lip reading as interface design: The gadfly of the gaps

Garrison, K. (2018). *Communication Design Quarterly Review*, 6(4), 24–34. doi: 10.1145/3309589.3309592

"This article explores what lip reading can teach us about interface design" by first challenging "the idea that people can 'read' lips—an idea that is deeply imbedded in the literate tradition described by Walter Ong (1982) in *Orality and Literacy*." Instead, the author suggests that lip reading is "a complex rhetorical

activity of filling in the ‘gaps’ of communication” and offers “a lip-reading heuristic that can challenge those of us in communication related fields to remember how the invisible ‘gaps’ of communication are sometimes more important than the visible ‘interfaces.’” The article concludes with “reflections about how lip reading might ‘reimagine’ disability studies for technical and professional communicators.”

Lyn Gattis

Design

eInk versus paper: Exploring the effects of medium and typographic quality on recall and reading speed

Moys, J. L., Loveland, P., & Dyson, M. C. (2018). *Visible Language*, 52(3), 75–95. [doi: none]

This study found that disfluency created by poor typography slowed the reading speed on both mediums, but the effect on recall was vastly different. Disfluency increased the recall on the paper versions but decreased the recall when the electronic version was used. “This study compares the effects of reading from paper and an eInk display on recall and reading speed alongside the effects of changes in typographic quality (fluent and disfluent conditions). Both medium and typographic quality were between-subject variables resulting in four groups of participants. . . . Comparable reading speeds for paper and eInk were recorded and these were slower for disfluent conditions. Improved typographic quality significantly enhanced recall on eInk, whereas . . . paper participants who read the disfluent condition recalled more. These findings suggest that typographic quality has a significant effect on reading, which is also influenced by the medium.” This outcome indicates that instructors may use poorer typography on paper versions to slow readers to help them grasp important materials. “The better recall with more . . . legible [electronic] materials provides strong grounds to extend research into the impact of typographic presentation on reading and learning.”

Diana Fox Bentle

Exploring illustration styles for materials used in visual resources for people with aphasia

Moys, J. L., Martínez-Freile, C., McCrindle, R., Meteyard, L., Robson, H., Kendrick, L., & Wairagkar, M. (2018). *Visible Language*, 52(3), 97–113. [doi: none]

This article shows an intersection between design of technical graphics and healthcare of those with brain injuries. “Images are often used in cueing therapy and other kinds of rehabilitation activities for people with an acquired brain injury. This paper presents a small-scale pilot study . . . exploring the appropriateness of different styles of illustration applied to visual resources used in combination with assistive technologies for people with aphasia. The study investigated participants’ preferences and impressions of the materials with a view to informing design choices made for resources developed for the larger project. . . . Participants shared their impressions of ease of use and their preferences for different levels of visual complexity in the illustrations, as well as changes in format and layout. Findings show that participants preferred simple, icon-style illustrations rather than those with contextual detail.” The authors advise technical designers to “ensure images are graphically-informative” and to use “informative details that help clarify the meaning of a graphic rather than details that make an image more complex” when providing context.

Diana Fox Bentle

Matters of form: Questions of race, identity and design, and the U.S. Census

Balzhiser, D., Pimentel, C., & Scott, A. (2019). *Technical Communication Quarterly*, 28(1), 3–20. doi: 10.1080/10572252.2018.1539192

“This case examines how functionalist approaches manifest culturally based on users’ contexts. The authors conduct a critical visual semiotic analysis of the race and Hispanic origin questions on the 2010 U.S. Census form, demonstrating how incongruities in design potentially harm people. This demonstrates a need for adding critical analyses to design and research and it refocuses the Society for Technical Communication’s value of promoting the public good on to design and documentation in order to fight injustice.”

Rhonda Stanton

Reimagining disability and accessibility in technical and professional communication [special issue]

Zdenek, S. (ed.). (2018). *Communication Design Quarterly Review*, 6(4), 4–11. doi: 10.1145/3309589.3309590

Authors in this special issue ask readers “to reflect on the transformative potential of disability studies to reimagine technical and professional communication (TPC). Informing this special issue is the notion that disability ‘enables insight—critical, experiential, cognitive, sensory, and pedagogical insight’ (Brueggemann, 2002, p. 795). Rather than consider questions of access from the margins---e.g. after we receive a letter of accommodation from a student, when we need to satisfy a legal mandate, or when we turn to our organization’s web accessibility checklist—disability studies places disability and difference at the center of our practices and pedagogies (p. 814).” The special issue includes articles on accessibility viewed through the lens of virtue ethics, the relationship between lip reading and interface design, and multilingual technical content creation.

Lyn Gattis

Scaling the interactive dot map

Walker, K. E. (2018). *Cartographica*, 53(3), 171–184. doi: muse.jhu.edu/article/705399

“Dot maps are effective for cartographic visualization of categorical data. Recent advances in Web mapping technology have facilitated the development of interactive dot maps, in which users can pan and zoom to view data distributions for different areas. This interactivity, however, introduces multiple cartographic challenges, as design decisions that are appropriate at large scales can lead to clutter and illegibility at small scales. This article considers these challenges in the context of an applied example—an interactive dot map of educational attainment in the United States. It covers the methodology of the map’s creation as well as how it addresses the cartographic challenges of interactive dot mapping.”

Edward A. Malone

Editing

Reading aloud: Editorial societies and orality in magazines of the early American republic

Eastman, C. (2019). *Early American Literature*, 54(1), 163–188. doi: muse.jhu.edu/article/716315

“This essay examines the widespread phenomenon during the early Republic of ‘societies of gentlemen’ who edited magazines and made editorial decisions based at least in part on how a piece sounded when read aloud to one another. This collective form of editing and supporting a magazine reveals the many ways that orality and sociability were crucial to the publication, consumption, and imaginative work of periodicals in the early American Republic. Beyond the selection process at the level of publication, magazines foregrounded material that represented conversation and sociability on the page. The prevalence of representations of orality within magazines reveals the extent to which editors assumed that their readers would also be reading aloud to one another in social gatherings. Taken together, these practices suggest that magazines’ much-discussed nationalistic claims about their public usefulness might invoke community, collaboration, collective literary production, and civic ties as much as they also promoted individual literary talent.”

Edward A. Malone

Education

Advocating for sustainability: A report on and critique of the undergraduate capstone course

Melonçon, L., & Schreiber, J. (2018). *Technical Communication Quarterly*, 27(4), 322–335. doi: 10.1080/10572252.2018.1515407

“The authors provide an overview of what capstone courses do by presenting information from across the field based on materials received from and interviews with technical and professional communication program administrators and faculty. The authors then point to opportunities to improve the course. Finally, the authors argue for sustainable program development as the theoretical framework to perform programmatic work.”

Rhonda Stanton

Assessment of memorandum writing in a quantitative business context

Williams, J. A. S., Schutts, J., Gallamore, K., & Amaral, N. (2019). *Business and Professional Communication Quarterly*, 82(1), 38–52. doi: 10.1177/2329490618798606

This piece gives specific advice, scenarios, and a rubric for instructors to help students improve their writing while keeping the specific class focus. “This article examines a manageable approach that provides students with significant opportunities to write and improve their writing over time in an introductory quantitative business course. The study examines six elements of written communication skills, as evidenced by assessment data from memorandum assignments administered following pedagogical interventions throughout the semester in an operations management course. Results demonstrate that student performance of audience identification, action-oriented request, and punctuation improved. Interestingly, student performance of grammar slightly decreased. A follow-up analysis indicates that some writing mistakes were related to a lack of proofreading. This article also presents original memorandum assignments and suggestions for improvement.” The authors recommend having students use online grammar/punctuation

checkers and university writing centers in addition to instructor coaching to improve all elements.

Diana Fox Bentle

Cultivating a sense of belonging: Using Twitter to establish a community in an introductory technical communication classroom

Friess, E., & Lam, C. (2018). *Technical Communication Quarterly*, 27(4), 343–361. doi: 10.1080/10572252.2018.1520435

“The introductory technical communication class serves many purposes, but perhaps an understudied purpose is the class’s role in university retention and persistence. In this study, students used Twitter to complete biweekly assignments as a way to develop a sense of belonging, which is an important component to retention and persistence. Authors explore how this Twitter intervention affected students’ sense of belonging, their creation of an online community, and their continued pursuit of a technical communication education.”

Rhonda Stanton

Rhetorics of proposal writing: Lessons for pedagogy in research and real-world practice

Lawrence, H. Y., Lussos, R. G., & Clark, J. A. (2019). *Journal of Technical Writing and Communication*, 49(1), 33–50. doi: 10.1177/0047281617743016

“Proposals are ubiquitous documents with challenges beyond the writing task itself, such as project management, strategic development, and research. Reporting on proposal instruction research in other fields and the results of an interview study with proposal writers, this article argues for a shift in how proposals are taught and conceptualized. By coaching students on the wide range of rhetorical practices that proposals require rather than how to produce proposal documents, technical and professional communication instruction can better prepare future communicators to manage and produce competitive proposals and more actively participate in these important efforts in the community, industry, and academy.”

Anita Ford

Writing and conceptual learning in science: An analysis of assignments

Gere, A. R., Limlamai, N., Wilson, E., Saylor, K. M., & Pugh, R. (2019). *Written Communication*, 36(1), 99–135. doi: 10.1177/0741088318804820

“This systematic review of 46 published articles investigates the constructs employed and the meanings assigned to writing in writing-to-learn assignments given to students in science courses. Using components of assignments associated with the greatest learning gains—meaning making, clear expectations, interactive writing processes, and metacognition—this review illuminates the constructs of writing that yield conceptual learning in science. In so doing, this article also provides a framework that can be used to evaluate writing-to-learn assignments in science, and it documents a new era in research on writing to learn in science by showing the increased rigor that has characterized studies in this field during the past decade.”

Diana Fox Bentele

Ethics

Cultivating virtuous course designers: Using technical communication to reimagine accessibility in higher education

Huntsman, S., Colton, J. S., & Phillips, C. (2018). *Communication Design Quarterly Review*, 6(4), 12–23. doi: 10.1145/3309589.3309591

“Technical communicators are often charged with creating access to meaning through technology. However, these practices can have marginalizing effects. This article argues for reimagining accessibility through virtue ethics. Rather than identifying accessibility as an addition to document design or a set of guidelines, virtue ethics situates accessibility as a habitual practice, part of one’s character. This article describes the application of virtue ethics in a university partnership, which sought to create a culture of accessibility through three goals: to consider accessibility as an on-going process, to consider accessibility as a ‘vital’ part of all document design, and to recognize accessibility as a shared responsibility among stakeholders. Focusing on the virtues of courage and justice, [the authors]

interpret data from a survey of instructors and then provide suggestions on how others can join the accessibility conversation.”

Lyn Gattis

Health communication

Problem in the profession: How and why writing skills in nursing must be improved

Johnson, J. E., & Rulo, K. (2019). *Journal of Professional Nursing*, 35(1), 57–64. doi: 10.1016/j.profnurs.2018.05.005

“As a profession, nursing is obligated to disseminate knowledge by publishing research in the professional literature. Beyond producing scholarly work for publication, nurses need writing skills to complete doctoral dissertations and scholarly projects, and to succeed in obtaining funds for new nurse-directed business ventures. Ultimately, good writing skills are essential for the future of the nursing profession. In this article, [the authors] describe the critical role of writing in nursing, and offer a practical 10-point strategy for improving the writing ability of individual advanced practice nurses who need to improve their writing skills. This article also offers suggestions for increasing nursing’s surveillance of nurses’ writing skills such as increasing the emphasis on writing instruction as a priority in today’s nursing graduate school curriculum, greater writing support for nurses who are writing dissertations and scholarly projects, evaluating writing programs, and monitoring the completion rate of nursing dissertations.”

Edward A. Malone

When patients question vaccines: Considering vaccine communication through a material rhetorical approach

Lawrence, H. Y. (2018). *Rhetoric of Health & Medicine*, 1(1), 161–178. doi: dx.doi.org/10.5744/rhm.2018.1010

“Vaccinations are a notoriously difficult topic to discuss with patients, and efforts to persuade those who are most hesitant often fail. In this persuasion

brief, common vaccination concerns and skepticisms are reexamined through the perspectives offered by rhetorical studies. This analysis demonstrates why current counter-arguments to vaccine skepticisms often fall short. As an alternative, this article encourages practitioners to consider how the material qualities of vaccinations contribute to their instability and make them difficult for patients to accept. This perspective suggests relationship-building and coalition-building as routes for improving doctor-patient communication about vaccines.”

Edward A. Malone

Information management

Towards augmented reality manuals for industry 4.0: A methodology

Gattullo, M., Scurati, G. W., Fiorentino, M., Uva, A. E., Ferrise, F., & Bordegoni, M. (2019). *Robotics and Computer-Integrated Manufacturing*, 56, 276–286. doi: 10.1016/j.rcim.2018.10.001

“Augmented Reality (AR) is one of the most promising technology for technical manuals in the context of Industry 4.0. However, the implementation of AR documentation in industry is still challenging because specific standards and guidelines are missing. In this work, [the authors] propose a novel methodology for the conversion of existing ‘traditional’ documentation, and for the authoring of new manuals in AR in compliance to Industry 4.0 principles. The methodology is based on the optimization of text usage with the ASD Simplified Technical English, the conversion of text instructions into 2D graphic symbols, and the structuring of the content through the combination of Darwin Information Typing Architecture (DITA) and Information Mapping (IM). [The authors] tested the proposed approach with a case study of a maintenance manual of hydraulic breakers. [They] validated it with a user test collecting subjective feedbacks of 22 users. The results of this experiment confirm that the manual obtained using [this] methodology is clearer than other templates.”

Edward A. Malone

Instructions

The rhetorical work of YouTube’s beauty community: Relationship-and identity-building in user-created procedural discourse

Ledbetter, L. (2018). *Technical Communication Quarterly*, 27(4), 287–299. doi: 10.1080/10572252.2018.1518950

“This study investigates YouTube’s beauty community, an online group of women who make videos about makeup products and techniques. The videos contain makeup application instructions and challenge ideas about what is ‘usable’ procedural discourse. They sometimes defy conventions for high production quality. Moreover, storytelling and instruction are integral to the rhetorical work of these tutorials. For the diverse groups in this community, procedural discourse also serves as a means of establishing credibility not otherwise afforded to them, as well as opportunities for identity- and relationship building.”

Rhonda Stanton

Intercultural issues

Linguistic injustice in the writing of research articles in English as a second language: Data from Taiwanese and Mexican researchers

Hanauer, D. I., Sheridan, C. L., & Englander, K. (2019). *Written Communication*, 3(1), 136–154. doi: 10.1177/0741088318804821

Because so much professional advancement depends upon publication, these findings are important considerations for publishers and multilingual researchers. “This study investigates the added burden Mexican and Taiwanese non-native English speaker (NNES) researchers perceive when writing research articles in English as a second language (L2) compared with their experience of first language (L1) science writing. 148 Mexican and 236 Taiwanese researchers completed an established survey of science writing burden. Results revealed significant differences between

L1 and L2 science writing with an increased burden for L2 science writing consisting of an average increase of 24% in difficulty, 10% in dissatisfaction and 22% in anxiety. No significant differences between the Mexican and Taiwanese researchers were found. Regression analyses established that the variables of science writing burden contribute to a sense that English is a barrier to writing science. [The researchers] maintain that the additional burden of L2 science writing constitutes a linguistic injustice and a barrier to science that should be addressed by relevant constituents.”

Diana Fox Bentele

Researching multiple publics through latent profile analysis: Similarities and differences in science and technology attitudes in China, Japan, South Korea and the United States

Pullman, A., Chen, M. Y., Zou, D., Hives, B. A., & Liu, Y. (2019). *Public Understanding of Science*, 28(2), 130–145. doi: 10.1177/0963662518791902

“How science and technology attitudes vary across the United States, China, South Korea and Japan—all of which top Bloomberg’s list of high-tech centralization—is explored through data from the sixth wave of the World Values Survey (2010–2014). The following study examines the presence of different types of attitudinal groups using latent profile analysis. Not only do unique attitudinal groups exist in each country, but each group is uniquely influenced by select demographic characteristics, including education, age, gender, religiosity, employment status and individual interaction with technology. The findings provide insight into public attitudes towards science and technology across social and cultural contexts and generate nuanced understandings of similar and different attitudinal groups in East Asia and the United States.”

Lyn Gattis

Language

Designing for intersectional, interdependent accessibility: A case study of multilingual technical content creation

Gonzales, L. (2018). *Communication Design Quarterly Review*, 6(4), 35–45. doi: 10.1145/3309589.3309593

“Drawing on narratives (Jones, 2016; Jones & Walton, 2018) from bilingual technical communication projects, this article makes a case for the importance of considering language access and accessibility in crafting and sharing digital research. Connecting conversations in disability studies and language diversity, the author emphasizes how an interdependent (Price, 2011; Price & Kerchbaum, 2016), intersectional (Crenshaw, 1989; Medina & Haas, 2018) orientation to access through disability studies and translation can help technical communication researchers to design and disseminate digital research that is accessible to audiences from various linguistic backgrounds and who also identify with various dis/abilities.”

Lyn Gattis

Professional issues

Going rogue: How I became a communication specialist in an engineering department

Ford, J. D. (2018). *Technical Communication Quarterly*, 27(4), 336–342. doi: 10.1080/10572252.2018.1518511

“Program location has been a key conversation piece in discussions concerning the technical communication profession. Less attention has been devoted toward location of individual faculty, particularly those who may be the lone communicator in departments outside of English or humanities. Although these arrangements may not be without challenges, they also may yield unique opportunities for interdisciplinary collaborations and professional identity shaping in ways that more traditional academic technical communication positions do not.”

Rhonda Stanton

Research

Exploring an ethnography-based knowledge network model for professional communication analysis of knowledge integration

Hannah, M. A., & Simeone, M. (2018). *IEEE Transactions on Professional Communication*, 61(4), 372–388. doi: 10.1109/TPC.2018.2870682

“In contemporary knowledge-intensive spaces, workers often team with experts from different disciplinary backgrounds and different geographic locations and, thus, they face the challenge of integrating knowledge in their work. When modeling how communication can be improved in these circumstances, previous studies have often relied on social network analysis to understand the aggregate exchanges among team members. In this study, rather than analyze social networks (people linked by communication), [the authors] argue that network analysis of knowledge networks (people linked by common knowledge) presents an opportunity to better understand and address the challenge of knowledge integration in organizational contexts. . . . [The authors] conducted an ethnography of a team science collaboration and used observations to create a survey of terms that measured subjects’ self-professed understanding of key concepts. [They] used the survey results to produce a bimodal network model of agents and terms, in which [they] binarized link values after filtering for only the highest-rated terms for each subject. . . . The model demonstrated that the team collaboration broke into two distinct groupings. Ego networks extracted from this parent network showed that concepts commonly well-understood in the team join together multiple subgroups of expert knowledge.” The authors conclude that “[t]he knowledge network is a useful instrument in helping team members understand possibilities for integrating knowledge across disciplines and subspecialties.”

Lyn Gattis

Hand collecting and coding versus data-driven methods in technical and professional communication research

Lauer, C., Brumberger, E., & Beveridge, A. (2018). *IEEE Transactions on Professional Communication*, 61(4), 389–408. doi: 10.1109/TPC.2018.2870632

“Qualitative technical communication research often produces datasets that are too large to manage effectively with hand-coded approaches. Text-mining methods, used carefully, may uncover patterns and provide results for larger datasets that are more easily reproduced and scaled....” The authors of this study analyzed the processes of hand collecting and coding an existing dataset and then showed how those results “might be replicated with web scraping and machine coding.” The researchers found that the speed of Web scraping provided one clear advantage for automated data collection. With respect to coding, “[m]achine coding was able to provide comparable outputs to hand coding for certain types of data; for more nuanced and verbally complex data, machine coding was less useful and less reliable.” The authors conclude that researchers should consider “the context of a particular project when weighing the affordances and limitations of hand collecting and coding over automated approaches. Ultimately, a mixed-methods approach that relies on a combination of hand coding and automated coding should prove to be the most productive for current and future kinds of technical communication work, in which close attention to the nuances of language is critical, but in which processing large amounts of data would yield significant benefits as well.”

Lyn Gattis

Usability

Open-source software in the sciences: The challenge of user support

Swarts, J. (2019). *Journal of Business and Technical Communication*, 33(1), 60–90. doi: 10.1177/1050651918780202

“This study examines user support issues concerning open-source software in computational sciences. The literature suggests that there are three main problem areas: transparency, learnability, and usability. Looking at questions asked in user communities for chemistry software projects, the author found that for software supported by feature-based documentation, problems of transparency and learnability are prominent, leading users to have difficulty reconciling disciplinary practices and values with software operations. For software supported by task-based documentation, usability problems were more prominent. The author considers the implications of this study for user support and the role that technical communication could play in developing and supporting open-source projects.”

Sean C. Herring

Perspectives of deaf and hard of hearing viewers of captions

Butler, J. (2019). *American Annals of the Deaf*, 163(5), 534–553. doi: 10.1353/aad.2019.0002

“Educational rights and other rights enumerated in federal law support deaf and hard of hearing (DHH) viewers’ access to captions in visual electronic media, yet uncaptioned and inadequately captioned media still exist. To determine what is satisfactory in captioned media and what could be improved to ensure access, data were gathered from focus group discussions with 20 DHH students who shared their perspectives on captions. The focus group analysis indicates that major topics of concern for DHH viewers include advocacy

for captions and caption formatting preferences; the need for direct access to real-time videos, online videos, and other media; how captions influence and benefit DHH and hearing viewers; and captions’ importance in public, educational, and other social/cultural spaces. The author concludes that DHH viewers’ perspectives can help educators and advocates strengthen access to captions in education and society.”

Edward A. Malone

Writing

Teaching research writing in academia

Chiavolini, D., & Feinberg, J. S. (2018). *AMWA Journal*, 33(4), 180–183. [doi: none]

“The transmission of bad writing habits through generations of scientists may explain the continuous decline in the readability of scientific writing,” according to these authors, who work as scientific editors at an academic research institution. They use three main educational strategies to improve academic writing within their department. In “didactic editing, which uses the editor’s query to educate writers,” the authors “request clarification . . . explain editorial changes . . . and show how these specific interventions enhance overall clarity and cohesion.” Through department-wide workshops and seminars, the authors “provide broader instruction on common document types,” delivered in a combination of lecture and hands-on writing practice. Finally, through individual coaching sessions with faculty, they help with document planning and development or follow up on lecture content. Their ultimate goal is “to instill good writing habits on a continuous basis” and thereby “to gradually change [their] department’s writing culture from within.”

Lyn Gattis